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Agricultural Producer Support Policy in Iran and Selected Countries

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Abstract

Agricultural policies in Iran have aimed at achieving self-sufficiency in food productions through the government various policies. The aim of this paper is to examine the current level of protection which may exist in agricultural sector in Iran and other countries. The results indicate that the PSE in Iran is much higher than the OECD and is close to Japanese and Korean PSE percentage (i.e. 58 and 64 percent). The broadest indicator of support representing the sum of transfers to agricultural producers (PSE), expenditure for general services (GSSE), and direct budgetary transfers to consumers, reached 83 billion Dollars per year in 2001-2005 which is almost equivalent to 13.4 percent of Iran's GDP in this period. This is much higher than the OECD average and suggests a relatively high burden of agricultural support on Iran's economy.

Keywords: Iran, Producers, Support Policy, PSE, GSSE

JEL Classification: Q18

Introduction

Farming is one of the most important social and economic foundation stones of Iranian life and culture. Policy in the sector has been driven largely by the need to rely on domestic production to meet the needs of a rapidly increasing demand. Due to geopolitical considerations, Iran places emphasis on maintaining high levels of self-sufficiency in order to provide for food and security, ensuring farmers a decent livelihood and relying on imports from developing countries.

During the early period after revolution in 1979, the policy concentration was on the attainment of rapid economic growth to consolidate the economic base of the country upon which the socio-economic objectives were to be achieved. Policy in this sector has been driven mainly by self-sufficiency; import and export controls, together with domestic support, have been used to ensure that domestic supplies meet domestic demand. The agricultural sector has been shielded from foreign competition by tariffs and/or non-tariff barriers, including quantitative restrictions, import licensing, price controls (on inputs and final goods), and marketing restrictions. Due to geopolitical considerations, Iran places emphasis on maintaining high levels of self-sufficiency in order to provide for food and security, ensuring farmers a decent livelihood and relying on im-

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ports from developing countries. Thus, in addition to price supports and input subsidies to ensure remunerative prices for farmers and reduced costs of production, the Government has put in place procurement and distribution measures to ensure supply of essential foods to the population through a public distribution system.

The government of Iran through subsidy tries to reduce the price paid by farmers for inputs such as fertilizer, pesticides, feed, seeds, machinery, energy, water, insurance, credit and infrastructural facilities. The support of farm product prices, have often been viewed as an instrument for raising farm income. Farm Price Supports are said to improve rural welfare because farmers are believed to constitute the poorer section of the country. Another rationale for farm price policy support is to provide the incentive to farmers to increase production of given crops.

Price policy in Iran is also viewed as an instrument of stabilization and reducing mean of year-to-year price fluctuation. Price policy has also been viewed as an instrument to speed up the process of economic development. The most obvious effect of agricultural price policy is on the production of the affected crops. PSE is an indicator of the annual monetary value of gross transfers from consumers and taxpayers to support agricultural producers, measured at the farm-gate level, arising from policy measures that support agriculture, regardless of their nature, objectives or impacts on farm production or income. The PSE measures support arising from policies targeted at agriculture relative to a situation without such policies, i.e.; one in which producers are subject only to general policies (including economic, social, environmental and tax policies) of the country. Although the PSE is measured net of producer contributions to help to finance a support policy (e.g., through a levy on production) it is fundamentally a gross concept because any costs associated with those policies, and incurred by individual producers, are not deducted¹. It is also a measure of nominal assistance in the sense that increased costs associated with import duties on inputs are not deducted. The PSE includes both import duties on outputs or inputs, tax exemptions and budgetary payments, including those for remunerating non-marketed goods and services. The indicator measures, therefore, more than just the "subsidy element". Although farm receipts (revenue)² are increased (or farm expenditure reduced) by the amount of support, the PSE is not in itself an estimate of the impact on farm production or income.

In Iran and many other developing countries, governments rely on price-based measure more than on budgetary payments to achieve agricultural policy objectives defined to include price stabilization or food self-sufficiency. Assessing the effects of these price-based measures is thus important to evaluating whether agriculture is being protected or disprotected by commodity or in the aggregate. This aspect of producer support estimates (PSEs) is simple to describe conceptually but difficult to evaluate well empirically.

The analysis of agricultural policy often includes the estimation of overall effects on the performance of domestic agriculture. The best known and internationally adopted method to appraise the effect of all policy instruments is indicators of agricultural support developed by the OECD.

It is useful to have the quantitative measure of agricultural protection to evaluate the current level of protection that exists for major agricultural commodities. In this paper, we measure the PSE (Producer Support Estimate), TSE (Total Support Estimate) in Iran and will compare it with the PSE measured in selected countries.

Method and Material

In order to get a reliable data, it was decided to gather the required information from various sources and double check the data. Thus, the data is obtained from national data published by the Central Bank of Iran, Ministry of Agriculture, Budget and Planning Organization and FAO Database. The investigation period covers the years from 1993 to 2004.

Various indicators of agricultural protection can be computed to measure the degree of support of the agricultural sector as a whole and of important commodities individually. In this study the evaluation is based on the indicators of agricultural support developed by the OECD, including the Producer Support Estimate (PSE), Consumer Support Estimate (CSE), General Services Support Estimate (GSSE) and Total Support Estimate (TSE).

The **Producer Support Estimate (PSE)** is an indicator of the annual monetary value of gross transfers from consumers and taxpayers to support agricultural producers, measured at the farm-gate level, arising from policy measures that support agriculture, regardless of their nature, objectives or impacts on farm production or income. The PSE measures support arising from policies targeted at agriculture relative to a situation without such policies, i.e.; one in which producers are subject only to general policies (including economic, social, environmental and tax policies) of the country. Although the PSE is measured net of producer contributions to help to finance a support policy (e.g., through a levy on production) it is fundamentally a gross concept because any costs associated with those policies, and incurred by individual producers, are not deducted³. It is also a measure of nominal assistance in the sense that increased costs associated with import duties on inputs are not deducted. The PSE includes both import duties on outputs or inputs, tax exemptions and budgetary payments, including those for remunerating non-marketed goods and services. The indicator measures, therefore, more than just the "subsidy element" (OECD, 2002).

The **Market Price Support (MPS)** is an indicator of the annual monetary value of gross transfers from consumers and taxpayers⁴ to agricultural producers arising from policy measures that create a gap between domestic market prices and border prices of a specific agricultural commodity, measured at the farm-gate level. The MPS, which is conditional on the production of a specific commodity, includes the transfer to producers associated with both production for domestic use and export. It is measured by the price gap applied to current unlimited production (a. Based on unlimited output): or, where restrictions on output apply, to current limited production (b. Based on limited output). The MPS is net of financial contributions from individual producers through producer levies on sales of the specific commodity or penalties for not respecting regulations such as production quotas (c. Price levies). In the case of livestock production, it is net of the market price support on domestically produced coarse grains and oilseeds used as animal feed (d. Excess feed cost).

The **General Services Support Estimate (GSSE)** indicator of the annual monetary value of gross transfers to general services provided to agriculture collectively, arising from policy measures which support agriculture, regardless of their nature, objectives and impacts on farm production, income, or consumption of farm products. These payments to eligible private or public general service are provided to agriculture generally and not individually to farms. They include payments for collective agric-environmental

action and taxpayer's transfers for the following purposes: improving agricultural production (l. research and development); agricultural training and education (j. agricultural schools); control of quality and safety of food, agricultural inputs and the environment (k. inspection services); improvement of off-farm collective infrastructures, including downstream and upstream industry (l. infrastructures); assistance to marketing and promotion (m. marketing and promotion); meeting the costs of depreciation and disposal of public storage of agricultural products (n. public stockholding) and other general services that cannot be disaggregated and allocated to the above categories due, for example, to a lack of information (o. miscellaneous). Unlike the PSE and CSE transfers, these transfers are not received by producers or consumers individually, and do not directly affect farm receipts (revenue) or consumption expenditure, although they may affect production and consumption of agricultural commodities.

The consumer Support Estimate (CSE) is an indicator of the annual monetary value of gross transfers to (from) consumers of agricultural commodities measured at the farm-gate level, arising from policy measures which support agriculture, regardless of their nature, objectives or impacts on consumption of farm products.

The CSE includes explicit and implicit consumer transfers to producers of agricultural commodities, measured at the farm-gate (first consumer) level and associated with the following market price support on domestically produced consumption (p. transfers to producers from consumers); transfers to the budget or to importers, or to both, on the share of consumption that is imported (q. other transfers from consumers); net of any payment to consumers that offsets their contribution to market price support of a specific commodity (r. transfers to consumers from taxpayers); and the producer contribution (as consumers of domestically produced crops) to the market price support on crops used in animal feed (*s. excess feed cost*). When negative, this indicates transfers from consumers and measures the implicit tax on consumption associated with policies to the agricultural sector. Although consumption expenditure is increased (reduced) by the amount of the implicit tax (payments), this indicator is not, in itself, an estimate of the impact on consumption expenditure.

Total Support Estimate (TSE) an indicator of the annual monetary value of all gross transfers from taxpayers and consumers arising from policy measures that support agriculture, net of the associated budgetary receipts, regardless of their objectives and impacts on farm production and income, or consumption of farm products. , the TSE is also the sum of the PSE, the GSSE and the transfers from taxpayers to consumers (in CSE). The TSE measures the overall cost of agricultural support financed by consumers (t. transfers from consumers) and taxpayers (u. transfers from taxpayers) net of import receipts (v. budget revenues).

The TSE includes:

- 1- The explicit and implicit gross transfers from consumers of agricultural commodities to agricultural producers net of producers financial contributions (which appear in MPS and CSE)
- 2- The gross transfers from taxpayers to agricultural producers (in the PSE)
- 3- The gross transfers from taxpayers to general services provided to agriculture (GSSE) and the gross transfers from taxpayers to consumers of agricultural commodities (in the CSE). As the transfers from consumers to producers are included in the MPS,

As indicated, the methodology applied in this study is fully consistent with that applied for OECD. As for other transition or developing economies, the results have to be interpreted carefully bearing in mind recognized limitations with respect to policy and commodity coverage, and data availability. In addition, the macroeconomic and institutional framework within which agricultural policy measures have been applied may have an impact on the results. Thus, the Market Price Support (MPS) element may capture the effects not only of agricultural policies as such, but also macroeconomic policies (in particular through the exchange rate) and of imperfect price transmission from the border to the farm gate level. In the case of Iran, with a static exchange rate, the impact of macroeconomic factors seems to be high.

However, other factors such as a continuing inefficient downstream sector, a large share of agricultural production consumed on farms (Tian *et al.*, 2002), weak price transmission compared to mature market economies, and data collection systems lagging behind the changes in the economy, may distort the measured level of support.

Results and conclusion

Aggregate results

Producer Support Estimate (PSE)

The Producer Support Estimate figures for Iran, OECD and a number of selected non OECD countries are reported in Table 1.

According to the information given in table 1, the aggregate percentage of producer support estimate in Iran fluctuated within a range of 31 percent to 76 percent between 1990 and 2002 then falling to 49 percent in 2003 and 47 percent in 2004. Comparison of producer support for Iran and selected OECD and non-OECD countries indicates that Iran has a high level of producer support. The percentage PSE in Iran, at 64 percent on average in 2001-2005, is much higher than the OECD average (31 percent) and almost

Table 1: Producer Support Estimate (PSE) in Iran and Selected Countries, 1993-2004

| country | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Iran | 31.5 | 57.9 | 73.2 | 77.8 | 79.2 | 91.9 | 89.7 | 80.9 | 66.4 | 76.5 | 49.4 | 47.2 |
| Brazil | n.c. | n.c. | -1 | 1 | 1 | 6 | 1 | 4 | 3 | 3 | 4 | 3 |
| Japan | 57 | 62 | 61 | 57 | 53 | 57 | 59 | 60 | 57 | 58 | 59 | 56 |
| Korea | 73 | 73 | 72 | 64 | 63 | 57 | 65 | 67 | 62 | 65 | 61 | 63 |
| Mexico | 30 | 23 | -5 | 5 | 15 | 18 | 18 | 24 | 19 | 26 | 19 | 17 |
| US | 17 | 14 | 10 | 13 | 13 | 21 | 26 | 24 | 22 | 18 | 15 | 18 |
| Turkey | 23 | 14 | 12 | 15 | 25 | 26 | 23 | 21 | 4 | 20 | 29 | 27 |
| UE | 38 | 36 | 36 | 33 | 34 | 37 | 39 | 33 | 32 | 34 | 36 | 33 |
| OECD | 35 | 34 | 31 | 29 | 29 | 33 | 35 | 32 | 29 | 31 | 30 | 30 |

Source: OECD PSE/CSE databases 2005 and Study findings.

Note: n.c. means not collected.

Iran Statistical Yearbook 1998-2004.

equivalent to Japanese and Korean one (i.e. 58 and 64 percent respectively). This means that 64 percent of farm gross receipts have been supported.

Changes in the level of support for Iran are driven mainly by the evolution of support for crop products, in particular for wheat (Figure 2 and table 4). The government adopts a special program to increase the supply of grains in particular for wheat as a strategic crop. The government has applied a guarantee price policy for wheat. The domestic price set for wheat is much higher than world price. This price support policy for wheat resulted in a high level of support for the producers. For example this figure in year 2004 was nearly 86 percent.

It should be noted that the quoted PSE measures from OECD countries are the result of a process of reduction in their support after the Uruguay Round negotiations. Even then, the current support to the agriculture in Iran does not appear too high at least when compared with the levels of agricultural support in the OECD countries before the Uruguay Round.

Table 2. Consumer Support Estimate (CSE) in Iran and Selected Countries (1993-2004)

| country | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Iran | 17 | -6 | -16 | -29 | -24 | -38 | -40 | -53 | -7 | -8 | -6 | -3 |
| Brazil | n.c | n.c | 1 | 2 | 3 | -3 | 2 | -2 | 0 | -1 | -2 | -1 |
| Japan | -51 | -53 | -53 | -49 | -47 | -52 | -54 | -50 | -49 | -52 | -52 | -50 |
| Korea | -71 | -69 | -71 | -63 | -61 | -53 | -63 | -63 | -59 | -64 | -58 | -58 |
| Mexico | -25 | -11 | 18 | 6 | -8 | -12 | -15 | -19 | -14 | -22 | -14 | -10 |
| US | 2 | 4 | 7 | 4 | 4 | -2 | -2 | 0 | 0 | 4 | 7 | 6 |
| Turkey | -23 | -8 | -8 | -11 | -22 | -27 | -23 | -23 | -2 | -17 | -26 | -22 |
| EU | -27 | -25 | -23 | -20 | -20 | -24 | -28 | -20 | -18 | -21 | -22 | -19 |
| OECD | -28 | -27 | -24 | -21 | -21 | -24 | -27 | -23 | -20 | -22 | -21 | -20 |

Sources: OECD PSE/CSE databases 2005 , Iran Statistical Yearbook 1998-2004 and study findings.

Note: n.c means not collected.

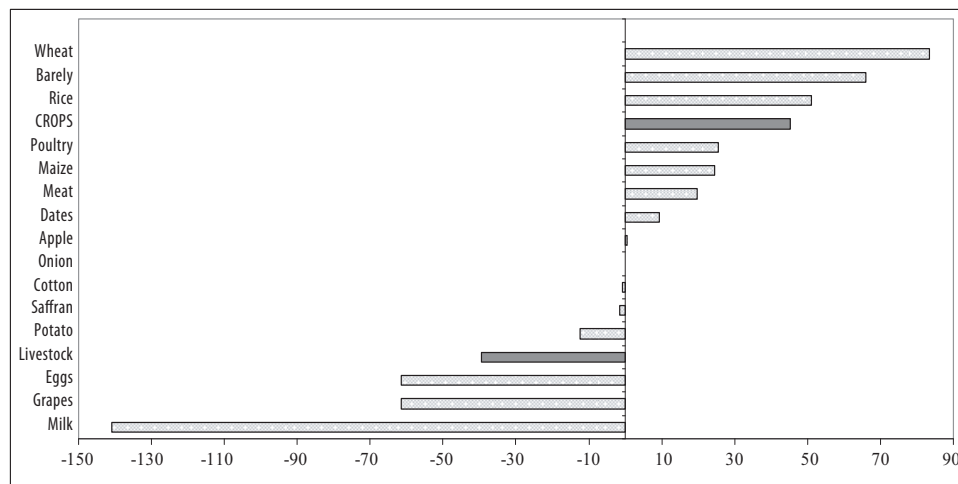


Figure 2: Iran's PSE by Commodity, average 2001-2004; as percent of gross farm receipts

Consumer Support Estimate

The Consumer Support Estimate (CSE) is a PSE-related indicator measuring the cost of producer support to consumers of agricultural products. In the OECD methodology; the consumer is considered as the first buyer of these products. In the absence of consumer support policies, CSE generally reflects the developments in the market price support. The CSE figures are calculated using OECD methodology and reported in Table 2. Information's in table 2 indicates that an overall low degree of producer support in Iran means that agricultural support puts a relatively small burden on consumers, but overall taxation of Iran's consumers through agricultural policy measures has been growing in more recent years from minus 7.5 percent in 2001 to minus 3 percent in 2004.

Total Support Estimate

The Total Support Estimate (TSE) is the broadest indicator of support, representing the sum of transfers to agricultural producers (the PSE), expenditure for general services (the GSSE), and direct budgetary transfers to consumers.

The aggregate TSE in Iran reached 10 billion US\$ per year in 2001-2004. The TSE expressed as a percentage of GDP, indicates the cost that the support to the agricultural sector places on the overall economy. Between 1993 and 1999, the Iran's percentage TSE varies between 5 percent and 20 percent and then, after falling to 13 percent in 2000, it decreased each year and was 7 percent in 2003 and 2004 (Table 3). This suggests a relatively high burden of the agricultural support on the Iran's economy. Important factor contributing to Iran's high percentage TSE is the high relative PSE in total support (Table 3).

Table 3: Iran's Total Support Agricultural Sector

| | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|------|------|-------|-------|-------|-------|-------|-------|------|-------|------|------|
| Total Support Estimate (TSE), USD million of which: | 3494 | 8050 | 17040 | 20689 | 22449 | 23242 | 46516 | 37595 | 8988 | 14245 | 9297 | 9321 |
| Producer Support Estimate (PSE) | 3106 | 7752 | 16707 | 20320 | 22008 | 22867 | 46155 | 37136 | 8814 | 14111 | 9150 | 9178 |
| General Services (GSSE) | 388 | 297 | 333 | 369 | 442 | 376 | 361 | 459 | 174 | 134 | 146 | 143 |
| Transfer to consumer from taxpayers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TSE as share of GDP | 5 | 10 | 15 | 14 | 14 | 13 | 20 | 13 | 11 | 13 | 7 | 7 |

Source: study findings

Level of Producer Support by Commodity

Notwithstanding Iran's aggregate producer support is high; attention to the level of

support varies significantly across commodities. The spread in support levels across commodities is a potential source of distortion. There is a clear distinction between the levels of support for importable and exportable products (Figure 2). For the majority of importable, such as wheat, barley, maize and rice, the average level of support between 2001 and 2004 was high and ranged between 24 percent (maize) and 83 percent (wheat table 4, see Appendix). In contrast, for the majority of exportable products, such as cotton, potato, onion, saffron and apple, the level of support was low or even negative, reflecting no explicit policies supporting livestock, gardening producers.

For example, in 2001- 2004 the government decided to increase production of wheat to attain self-sufficiency and therefore domestic prices increase higher than world prices and support policy is higher than other products in period of the study.

Composition of the PSE

As Figure 3 indicates, the level of producer support in Iran is determined predominantly by the Budgetary Support. However, within budgetary support, a large part of support is provided through input subsidies. While budgetary support has almost been growing in absolute terms constantly, its share in the aggregate has been falling in the 2000s.

However, during the period covered by the study, the contributions of MPS to the PSE varied, in particular in the 1990s, reflecting fluctuations in the levels of domestic prices relative to world prices. It is worth noting that the share of MPS in the PSE has substantially increased between 2000 and 2004.

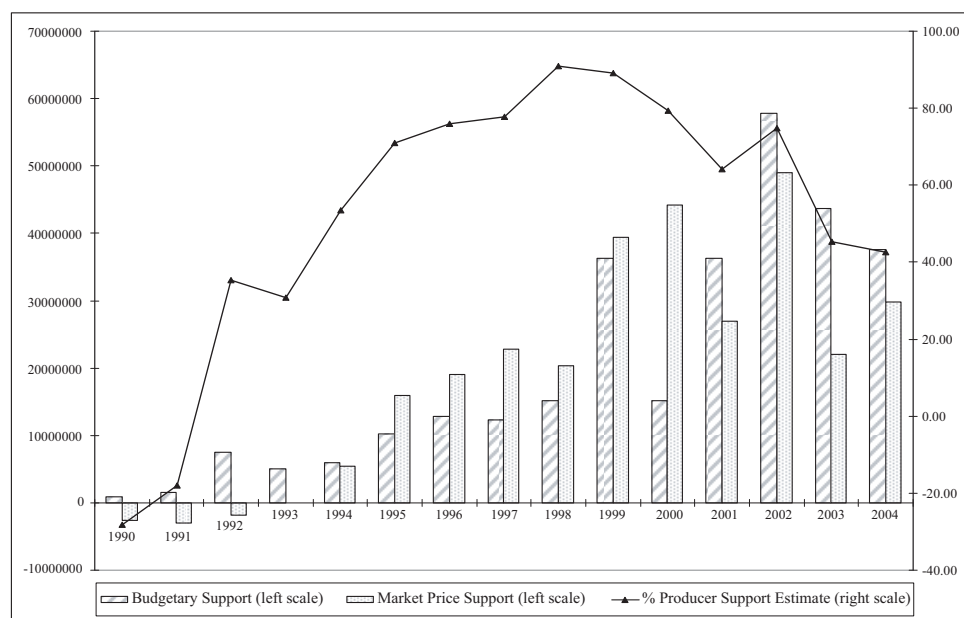


Figure 3: Composition of Producer Support Estimate, billion US\$, 1993-2004

Conclusions

From the above analysis of agricultural support in Iran, the following general conclusions can be drawn:

- a) The mix of measures used to support Iran's farmers is dominated by market price support and input subsidies that sometimes market price despite support couldn't overcome with world prices.
- b) Producer support to Iran's agricultural sector (measured by the PSE) places a relatively high cost on the Iran's economy, which is much higher than the OECD average. This is partly due to the economic importance of agriculture in a relatively poor economy, and partly due to a large expenditure on input subsidies.
- c) The level of support in year 2000 increased. This may mean that the producer prices started to adjust to reflect market conditions as well as border protection, in particular for imported commodities. At the same time, budgetary support tended to increase, which contributed to a rise at the level of support.
- d) While Iran's producer support is high, the level of support varies significantly across commodities, which is an indication of decorative policies. The highest levels of support are for import-competing commodities, such as wheat, barely, maize and rice. In contrast the level of supports for commodities such as cotton, potato, onion and saffron are low.

Notes

- ¹ In other words, elements in the PSE are, in general, gross transfer to producers because, to receive a given payment, producers have to produce or plant a specific commodity, or use a specific input, and therefore incur costs. These costs are not deducted from the amount of the payment, although they may absorb part of the payment.
- ² Farm receipts (revenues) are not the same as farm income, which are farm receipts less farm costs.
- ³ In other words, elements in the PSE are, in general, gross transfer to producers because, to receive a given payment, producers have to produce or plant a specific commodity, or use a specific input, and therefore incur costs. These costs are not deducted from the amount of the payment, although they may absorb part of the payment.
- ⁴ Transfers from taxpayers occur, for example, when subsidies are used to finance exports

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Appendix

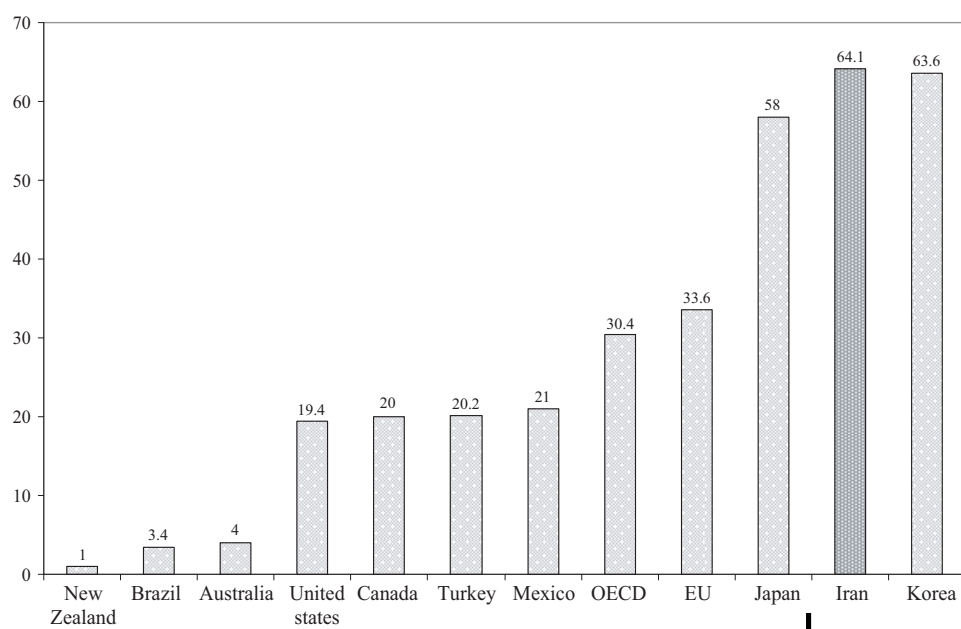


Figure 1. Percentage PSEs for Iran and Selected Countries, average 2001-2004 (As percent of gross farm receipts)

Source: OECD PSE/CSE databases 2005. Iran Statistical Yearbook 1998-2004.

Table 4: Calculation of Various Agricultural Support Measures for Wheat Production in Iran (1990-1996)

| <i>Wheat</i> | | <i>UNITS</i> | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 |
|---|--|--------------|----------|----------|----------|----------|----------|----------|----------|
| I. Level of production | data | tone | 8011675 | 8792670 | 10178690 | 10732340 | 10869560 | 11227540 | 10015183 |
| II. Producer price (at farm gate) | data | Rial/kg | 92 | 130 | 150 | 225 | 260 | 330 | 410 |
| III. Value of production (at farm gate) | (I)*(II)/1000 | Rial mill | 737074 | 1143047 | 1526804 | 2414777 | 2826086 | 3705088 | 4106225 |
| IV. Level of Consumption (at farm gate) | data | tone | 11393488 | 12429233 | 12631959 | 13181859 | 13189359 | 14327540 | 13889183 |
| V. Value of consumption (at farm gate) | data | Rial/kg | 102 | 103 | 136 | 154 | 376 | 265 | 338 |
| VI. Reference price (at farm gate) | (IV)*(V)/1000 | Rial mill | 1162136 | 1280211 | 1717946 | 2030006 | 4959199 | 3796798 | 4694544 |
| VII. Reference price | data | Rial/kg | 194 | 195 | 231 | 225 | 241 | 333 | 195 |
| VIII. Market price differential | (II) - (VII) | Rial/kg | -102 | -65 | -81 | 0 | 19 | -3 | 215 |
| IX. Market transfers | (IX.1)+(IX.2) | Rial mill | -1127038 | -907659 | -1060730 | -170188 | 524196 | -245407 | 2711584 |
| IX.1. Transfers to producers from consumers | IF((IV)>(I), (VIII)*(I)/1000, (VIII)*(IV)/1000) | Rial mill | -816291 | -572635 | -827049 | 3035 | 210231 | -34407 | 2156392 |
| IX.2. Other transfers from consumers | IF((IV)<(I), 0, ((IV)-(I))*((V)-(VII)/1000)) | Rial mill | -310747 | -335024 | -233681 | -173223 | 313965 | -211000 | 555192 |
| X. Budgetary transfers | (X.1) + (X.2) | Rial mill | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| X.1. Transfers to producers from taxpayers | IF((IV)>(I), 0, ((I)-(IV))*((VIII)/1000)) | Rial mill | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| X.2. Transfers to consumers from taxpayers | data | Rial mill | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| X. Market Price Support (MPS) | (IX.1)+(X.1) | Rial mill | -816291 | -572635 | -827049 | 3035 | 210231 | -34407 | 2156392 |
| XI. Producer NPC | $1/(100-(IX.1)+(X.1)+(XII.1))/((III)+(XII.1))*100$ | ratio | 0 | 1 | 1 | 1 | 1 | 1 | 2 |
| XI.1. Payment based on output | data | Rial mill | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| XI.2. Payment based on output per Kg | data | Rial/kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| XII. Consumer Support Estimate (CSE) | (X.2)-{(IX.1)+(IX.2)} | Rial mill | 1127038 | 907659 | 1060730 | 170188 | -524196 | 245407 | -2711584 |
| XII.1. Unit CSE | (XIII)/(IV)*1000 | Rial/kg | 99 | 73 | 84 | 13 | -40 | 17 | -195 |
| XII.2. Percentage CSE | (XIII) / {(VI) - (IX.2)}*100 | % | 77 | 56 | 54 | 8 | -11 | 6 | -66 |
| XIII. Consumer NPC | $1/(100-(IX.1)+(IX.2))/((VI)*100)*100$ | ratio | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| XV. Consumer NAC | $1-(XIII.2)/(100+(XIII.2))$ | ratio | 1 | 1 | 1 | 1 | 1 | 1 | 3 |

Table 4: Calculation of Various Agricultural Support Measures for Wheat Production in Iran (1997-2004)

| <i>Wheat</i> | | <i>UNITS</i> | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|--|--------------|----------|----------|----------|----------|----------|----------|----------|----------|
| I. Level of production | data | tone | 10044716 | 11955083 | 8673197 | 8087756 | 9458618 | 12450000 | 13440000 | 14000000 |
| II. Producer price (at farm gate) | data | Rial/kg | 480 | 600 | 672 | 875 | 2050 | 1300 | 1500 | 1700 |
| III. Value of production (at farm gate) | $(I) * (II) / 1000$ | Rial mill | 4821464 | 7173050 | 5828388 | 7076787 | 19390167 | 16185000 | 20160000 | 23800000 |
| IV. Level of Consumption (at farm gate) | data | tone | 15986624 | 15490309 | 14828733 | 14665505 | 15897568 | 16571953 | 14593875 | 14222777 |
| V. Value of consumption (at farm gate) | data | Rial/kg | 450 | 520 | 650 | 937 | 1090 | 1310 | 1404 | 1685 |
| VI. Reference price (at farm gate) | $(IV) * (V) / 1000$ | Rial mill | 7193981 | 8054961 | 9638676 | 13741578 | 17328349 | 21709258 | 20489801 | 23965379 |
| VII. Reference price | data | Rial/kg | 327 | 263 | 228 | 229 | 1084 | 1003 | 1238 | 1353 |
| VIII. Market price differential | $(II) - (VII)$ | Rial/kg | 153 | 337 | 444 | 646 | 966 | 297 | 262 | 347 |
| IX. Market transfers | $(IX.1) + (IX.2)$ | Rial mill | 2264637 | 4935511 | 6441960 | 9874944 | 9179632 | 4960324 | 3707368 | 4934597 |
| IX.1. Transfers to producers from consumers | $IF((IV) > (I), (VIII) * (I) / 1000, (VIII) * (IV) / 1000)$ | Rial mill | 1534920 | 4027393 | 3847053 | 5220944 | 9139389 | 3695572 | 3516256 | 4860594 |
| IX.2. Other transfers from consumers | $IF((IV) < (I), 0, ((IV) - (I)) * ((V) - (VII)) / 1000)$ | Rial mill | 729718 | 908118 | 2594907 | 4653999 | 40243 | 1264752 | 191112 | 74003 |
| X. Budgetary transfers | $(X.1) + (X.2)$ | Rial mill | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| X.1. Transfers to producers from taxpayers | $IF((IV) > (I), 0, ((I) - (IV)) * ((VIII) / 1000))$ | Rial mill | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| X.2. Transfers to consumers from taxpayers | data | Rial mill | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| X. Market Price Support (MPS) | $(IX.1) + (X.1)$ | Rial mill | 1534920 | 4027393 | 3847053 | 5220944 | 9139389 | 3695572 | 3516256 | 4860594 |
| XI. Producer NPC | $1 / (100 - ((IX.1) + (X.1) + (XII.1)) / ((III) + (XII.1)) * 100) * 100$ | ratio | 1 | 2 | 2 | 3 | 2 | 1 | 1 | 1 |
| XI.1. Payment based on output | data | Rial mill | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| XI.2. Payment based on output per Kg | data | Rial/kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| XII. Consumer Support Estimate (CSE) | $(X.2) - \{(IX.1) + (IX.2)\}$ | Rial mill | -2264637 | -4935511 | -6441960 | -9874944 | -9179632 | -4960324 | -3707368 | -4934597 |
| XII.1. Unit CSE | $(XIII) / (IV) * 1000$ | Rial/kg | -142 | -319 | -434 | -673 | -577 | -299 | -254 | -347 |
| XII.2. Percentage CSE | $(XIII) / \{(VI) - (IX.2)\} * 100$ | % | -35 | -69 | -91 | -109 | -53 | -24 | -18 | -21 |
| XIII. Consumer NPC | $1 / (100 - ((IX.1) + (IX.2)) / (VI) * 100) * 100$ | ratio | 1 | 3 | 3 | 4 | 2 | 1 | 1 | 1 |
| XV. Consumer NAC | $1 - (XIII.2) / \{100 + (XIII.2)\}$ | ratio | 2 | 3 | 12 | -12 | 2 | 1 | 1 | 1 |