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Estimating the Share of Agribusinesses in Iran's Gross Domestic Product and Aanalyzing the Reasons for Changes in Its Components

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ABSTRACT

Since the 1960s and the reduction in the share of agricultural sector in GDP in different countries, based on extensive forward and backward linkages of the agricultural sector, the concept of agribusiness has been introduced to explain the valuable contribution of agriculture to the national economy. This paper estimates the share of agribusiness in gross domestic product using input-output tables for 1986, 1991, 2001, and 2016. The results showed that the contribution of agribusinesses to GDP was about 2.5 times that of agricultural production (the average share of agribusinesses in 1986-2016 was about 23%, while the corresponding figure for agricultural value added was 9.25%). In a similar trend to developing and developed countries, the share of agribusinesses in GDP had decreased from 27.2 to 17% in 1986-2016. However, the examination of the components of agribusinesses in Iran compared to other countries shows significant differences, which can be attributed to Iran's arid and semi-arid climate, low rate of capital formation, low productivity of production factors, as well as lack of participation in regional and global chains due to long-term sanctions imposed on the economy.

Keywords: Contribution of agribusiness, Economic growth, GDP, Input-Output table.

JEL Classification: Q13, R15, F43.

INTRODUCTION

Despite a consensus on the role of agriculture in the development process in developed countries, its role in the economic development path has been at the center of heated debate in developing countries. Of course, attitudes towards the contribution of agriculture to economic development have changed over time. In the 1950s and 1960s, it was believed that agriculture played a minor role in development because labor could be transferred to the industrial sector at no cost (Lewis, 1954) and savings had to be channeled mainly into industrial investment (Hirschman, 1958). Since the 1980s, however, the need for agricultural growth has become a fundamental part of the economic development literature (World Bank, 1982A, 1982B). An empirical study of 85 developing countries found overwhelming evidence that agricultural value added is the causal variable in developing countries, while the direction of causality is unclear in developed countries (Tiffin and Irz, 2006). They show that agricultural value added per worker causes GDP per capita growth.

However, the downward trend in the share of agriculture in GDP continues to challenge its position in the development path. Considering the extensive forward and backward linkages as the distinguishing feature of the agricultural sector, Davis and Goldberg (1957) defined the concept of agribusiness and extended its scope to

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activities related to the supply of agricultural inputs, agricultural production and processing, and their distribution, which includes trade. Agribusiness is, therefore, a concept that goes beyond what is covered for the agricultural sector in the System of National Accounts (SNA). Accurately quantifying the size of agribusiness, and explaining the relationship between its evolution and the share of agriculture in national output not only helps to disseminate the concept of agribusiness, but can also highlight the role of agriculture in national development.

A review of studies conducted in Iran shows that the role of agriculture in Iran's economic development has been investigated both quantitatively and substantively. Momeni *et al*. (2018) studied the agricultural sector and proposed three different viewpoints on the role of the agricultural sector in Iran's economy using the Social Accounting Matrix (SAM) model. The first viewpoint is the 'structural change' theory, which considers the agricultural sector as a provider of food security. The second viewpoint focuses on the backward and forward linkages of the impact of the agricultural sector on a country's economic transition, while the third viewpoint considers the agricultural sector as a provider of economic-social balance. Without quantifying the size of agribusiness, Momeni, *et al*. (2018) showed that agricultural production and related industries not only have a greater multiplier than other economic sectors, but also a more stable position. In addition, the agricultural sector ranks the first in terms of job creation and can, therefore, be considered as a sector that contributes to socio-economic balance (third viewpoint).

Sadatbarikani and Irannejad (2013) ranked the economic sectors of Iran on the basis of input-output tables for the years 1973, 1986, 1991 and 2001. The results showed that the agricultural sector is one of the two most important economic sectors and has a good potential to stimulate production in other sectors, while the industrial sector is better at driving economic growth due to its stronger inter-sectoral linkages. Zand and Mosavi (2022) also found similar results by calculating backward and forward linkages using the 2011 version of the social accounting matrix and showed that the industry and agriculture sectors have more backward and forward linkages than other sectors.

Banouei *et al*. (2003) showed that the results can vary depending on the choice of multiplier calculation method. While the multiplier calculation using the Leontief and Miyazawa models favors the development and expansion of the industrial sector over the agricultural and service sectors, the social accounting matrix model favors the agricultural sector over the industrial and service sectors. Banouei *et al.* (2012), using the framework of a supply-driven social accounting matrix (2015 version), showed that a 25 percent reduction in agricultural production reduces the value added of other sectors by 3.2 percent. The worth note is that all of the above studies limited agriculture to activities related to agricultural production, without addressing the broader concept of agribusiness. While various quantitative methods have been introduced to measure the share of agribusiness in the national economy following Davis and Goldberg (1957), in the first attempt to measure the share of agribusiness in Iran's economy, Khaledi *et al*. (2019) used the share of agricultural value-added and the economic growth coefficient of the direct effect in an analytical-descriptive approach. They estimated the total direct and indirect share of agriculture in Iran's economy during 2004-2014 at 22.5 percent.

Xianhui and Yingheng (2010) use the input-output table to calculate the share of agribusiness in the Chinese economy during 1987-2002, and compare the results with the American and Japanese economies. They show that the share of agribusinesses in GDP is 26, 10 and 12% in China, the US and Japan, respectively, while the share of agriculture in GDP is 8.91, 1.34 and 1.44%. In order to explain the relationship between

economic growth and structural change of agribusinesses based on the concept of Davis and Goldberg (1957), Yan *et al*. (2011) presented a comprehensive framework of the agribusinesses system by dividing the value added of agribusinesses into four groups, namely: Agricultural inputs, production, processing, and distribution. They showed that as economic development progresses, the share of agribusinesses and agricultural production in GDP decreases, while the share of agricultural processing and distribution in GDP increases. Kamińska and Nawrocka (2016) used input-output tables to determine the share of agribusiness in GDP in EU member states. As expected, the results showed that the share of agriculture and agribusiness in GDP is much higher in less developed countries than in developed countries. The results of the correlation between gross value added per capita and the share of agribusiness in national income also showed that, although the share of agribusiness in GDP has been decreasing in all countries during the period under study, the decreasing trend of the share of agribusiness begins to stop as countries reach a higher level of development.

Bajan and Kamińska (2019) showed that the size of agribusinesses in China decreased from 18.9 to 14.5% during the period 2000-2014, while, at the same time, the share of the agricultural sector in the Chinese economy fluctuated between 5 and 6 percent. Cepea (2020) states that, in 2020, the share of the agricultural sector in the Brazilian economy would be around 7%, while the share of agribusinesses would be more than 3.8 times higher, or around 26.7%.

Although many attempts have been made in recent years to estimate the share of agribusiness in different countries and even efforts have been made to explain the factors affecting its changes, Table 1 clearly shows that no methodological work has been carried out in Iran. Therefore, based on the Kamińska and Nawrocka (2016) method, this article attempts to determine the real impact of the agricultural sector on Iran's economy by calculating the share of agribusinesses in GDP. The reason for the choice of the method is explained in the materials and methods section.

MATERIALS AND METHODS

Based on this insight, we try to explain the methodology of deriving the share of agribusinesses in the national economy using the input-output table. In addition, the size of agribusiness is calculated in five years over three decades. Finally, the possible causes of variation in the share of agribusinesses within this period are discussed in detail. The input-output model is commonly used in agribusiness study. So far, it is the only method used to analyze the volume and structure of material flows in the agri-food sector. Woś (1979) states that a complete and sufficiently detailed input-output table in terms of value makes it possible to determine the material flows between the spheres of agribusiness, which in turn makes it possible to determine the share of individual spheres in agribusiness output. Czyżewski and Grzelak (2012) emphasize that the assessments made with the use of input-output balances enable and expand the research perspective, taking into account the importance of the studied sectors (product groups) in the economy, their macroeconomic efficiency, and interdependencies in the development process (Rolnej, 2021).

Input-output tables are considered to be one of the most appropriate methods for measuring the importance of agribusiness in the national economy, as they allow the most complex inter-sectoral flows to be tracked (Miller and Blair, 2009). Two general methods can be distinguished in the literature on input-output tables. The first is the method presented by Davis and Goldberg (1957), which is explained in detail in an article by Leones *et al*. (1994). Since input-output tables are not published

Table 1. Methodology used and results obtained in previous studies.

Study	Objectives	Methodology	The share of agribusinesses calculation	Results
Momeni *et al.*, 2018	Defining the role of the agricultural sector in Iran's economy	The social accounting matrix	Not done	The agriculture sector provides the socio-economic balance
Sadatbarikani and Irannejad, 2013	Identifying the key sectors of Iran's economy	The input-output tables	Not done	Agriculture is one of the two key sectors of Iran's economy, but the industrial sector has greater growth potential due to stronger inter-sectoral linkages.
Zand and Mosavi, 2022	Comparison of backward linkages and linkages between different sectors of the Iran's economy	The social accounting matrix	Not done	Industry and agriculture have more forward and backward linkages than other sectors.
Banouei *et al.*, 2003	Examining the chain effects of demand on production in different sectors in Iran's economy	The social accounting matrix	Not done	The multiplier calculation method affects the obtained results, and the Social Accounting Matrix model prioritizes the economic and social effects of agricultural development over the industrial and services sectors.
Banouei *et al.*, 2012	Assessing the impact and consequences of declining agricultural production on Iran's economy	The social accounting matrix	Not done	A decline in agricultural production reduces value added in other sectors of Iran's economy.
Khaledi *et al.*, 2019	Measuring the share of agribusinesses in Iran's economy	Analytical-Descriptive	Done	The share of agribusiness is estimated to be around 22.5%.
Xianhui and Yingheng, 2010	Comparing the structure of Chinese agribusiness with that of the US and Japan	The input-output tables	Done	Agricultural output accounts for 8.91%, 1.34% and 1.44% of total sector output in China, the US and Japan respectively.
Yan *et al.*, 2011	Comparing the structure of Chinese agribusiness with that of the US and Japan	The input-output tables	Done	As economic development progresses, the share of agribusiness in GDP decreases, while the share of agricultural processing and distribution in GDP increases.
Kamińska and Nawrocka, 2016	Determining the share of agribusiness in EU Member States	The input-output tables	Done	The correlation between gross value added per capita and the share of agribusiness in national income shows that the sector's contribution to national income ceases to decline when economic development is high.

Table 1 continued…

Continue of Table 1. Methodology used and results obtained in previous studies.

Study	Objectives	Methodology	The share of agribusinesses calculation	Results
Bajan and Kamińska, 2019	Determining the contribution of agribusiness to the Chinese economy	The input-output tables	Done	Between 2000 and 2014, the share of these businesses fell from 18.9% to 14.5%, while the agricultural sector's share of the Chinese economy fluctuated between 5% and 6% of GDP.
Cruz, 2022			Done	In 2020, agribusiness as a whole was responsible for 26.7% of Brazil's GDP, while the agricultural sector represented 7% of national GDP.

for certain periods, this method estimates the share of agribusiness in GDP by assuming the stability of the technical coefficients in the input-output tables; this method does not give a correct estimate because of this limiting assumption. Another method proposed by Furtuoso *et al*. (1998) estimates the share of agribusiness in GDP directly from input-output tables without assuming the stability of technical coefficients. They divided the agribusinesses into the following four subcategories:

1. Agricultural inputs, which includes sectors that supply agricultural inputs;
2. Agricultural production
3. Agriculture-based industries (processing industries): related to agriculture in terms of demand for products
4. Distribution, which estimates the share of agricultural products in the value added of the transport, trade and services sectors.

Following the methodology of Kamińska and Nawrocka (2016) and Kamińska and Bajan (2019), this article uses the tripartite classification of Woś (1979) to estimate the share of agribusiness in GDP. It is worth noting that both recent studies also used the methodology of Furtuoso *et al*. (1998) to estimate the share of agribusinesses in GDP. In accordance with what was proposed by Woś (1979), three aggregates of agribusiness were identified: (1) supply; (2) agriculture; (3) food industry. As provided for in ISIC Rev. 4, agriculture is defined as sector A01: Crop and animal production, hunting and related service activities. In turn, the food industry are sectors C10–C12: Manufacture of food products, beverages and tobacco products.

$$GDP_{Agribusiness} = GDP_I + GDP_{II} + GDP_{III}$$

Where, GDP Agribusiness, $GDP_{\mathbf{I}}$, $GDP_{\mathbf{II}}$ and $GDP_{\mathbf{III}}$ denote the Share of agricultural activities,

Share of the food industry and share of agricultural sector support services respectively (Bajan & Kamińska (2019).

The first step in calculating Gross Domestic Product (GDP) is to determine the value added at producer prices in the I/O table. According to the system of national accounts, value added at producer prices is total value added at basic prices plus net taxes on products:

$$VA_{PP} = VA_{EP} + NT_{OP} \quad (2)$$

Where, VA_{PP}, VA_{EP} and NT_{OP} are Value Added at Producer Prices, Value Added at Basic Prices and NT_{OP} (Net of Tax) (tax less subsidies), respectively. To determine the GDP of the activities of group I (GDP_I),

the ratio of the GDP of the different sectors contributing to the agricultural and food industries is calculated. For this purpose, the Coefficients of the Value-Added flows of the different sectors (CVAi) are determined and multiplied by the value of the products and services (inputs) supplied by the sectors related to agriculture (zia) and the food industry (zif). The flow of value added (resulting from the supply of the agricultural and food industries) is deducted from the amount calculated above in order to avoid double counting. The value-added flow coefficients for each sector are calculated by dividing the value added by the producer prices in the relevant for the respective production, that is:

$$CVA_i = {VA_{ppi}}/{X_i} \quad (3)$$

Where, CVA_i, VA_{PPi} and X_i denote the value-added coefficient of sector i, the value added of sector i at basic producer price and the output of sector i, respectively. According to the above equations, the gross domestic product of the activities of GDP_I will be as follows:

$$GDP_I = \sum_{i=1}^{n}(z_{ia} * CVA_i) + \sum_{i=1}^{n}(z_{if} * CVA_i) - (z_{aa} * CVA_a) - (z_{ff} * CVA_f) \quad (4)$$

Where, z_{ia}, z_{if} and z_{aa} are, respectively, the value of the inputs supplied by the sector to the first stage activities of the agribusiness, the activities of the food industry and the value of the inputs of the first stage activities of agribusiness. CVA_i, VA_a and CVA_f are, respectively, the Value-Added Coefficients of the sector, the Value Added of the agricultural sector, and the Value Added of the food industry.

The calculation of the gross domestic product of the activities of the group **II** (GDP_{II}) involves the determination of the value added of agriculture at producer prices. In order to avoid double counting, the value added of agriculture supplied to the food industry (included in the GDP of the activities of group **I**) is deducted from the total GDP of this stage:

$$GDP_{II} = VA_{ppa} - z_{af} * CVA_a \quad (5)$$

Where, VA_{PPa} is the value added of the agricultural sector at producer prices, z_{af} is the value of the inputs supplied by the sector to the food industry and CVA_a is the value-added coefficient of the agricultural sector.

The gross product of group three (GDP_{III}) activities is also calculated in the same way. The value added of the food industry at producer prices is deducted from the value added supplied by the food industry to the agricultural sector [(gross domestic product of group one activities (GDP_I)]:

$$GDP_{III} = VA_{ppf} - z_{fa} * CVA_f \quad (6)$$

Where, VA_{PPf} is the Value Added of the food industry at Pproducer Prices, z_{fa} is the value of the inputs supplied by the food industry to the agricultural sector and CVA_f is the Value-Added Coefficient of the food industry.

RESULTS

In order to obtain an accurate figure for the changes in the size of agricultural businesses in Iran, the value added of each of the activities of the three groups was calculated at current prices using different input-output tables for the years 1986, 1991, 2001 and 2016. The results are presented in Table 2.

Due to the inflationary nature of the Iran's economy and the compilation of input-output tables based on current prices, the values in Table 2 have grown rapidly. In order to provide a clear picture of the changes in the value added of the agricultural sector, agribusinesses and its components, as well as its share in GDP, are calculated for the period under review and the results are presented in Figure 1.

Figure 1 highlights several key points. First, as expected, the share of agribusinesses in GDP is much higher than the corresponding figure for the agricultural sector. Therefore, the share of agriculture in GDP does not fully reflect the importance of the sector and should be complemented by the share of agribusinesses to establish its

Table 2. Comparison of gross domestic product and value added of agribusinesses at current prices by three groups for the period 1986-2016.

	1986	1991	2001	2016	Growth rate (%)
Agribusiness value added I	1305	5228	60033	759599	23.8
Agribusiness value added II	1735	7350	71091	1176841	24.27
Agribusiness value added III	435	748	6330	138345	21.19
Value added of all agribusinesses	3474	13326	137454	2104785	23.81
Gross Domestic Product	12795	49598	642823	12074549	25.62

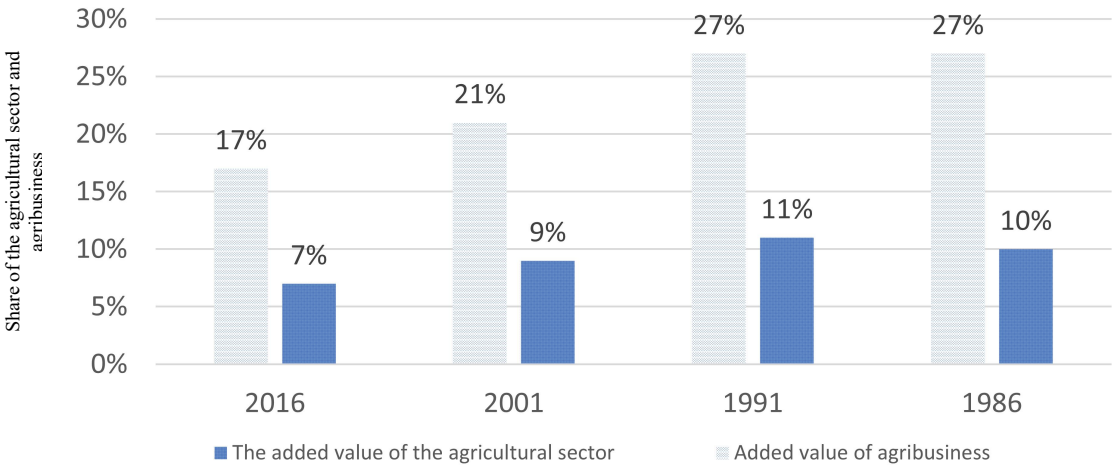

Figure 1. Share of the agricultural sector and agribusiness value added in Iran's GDP for the period 1986-2016.

position in the national economy. Based on the results, the share of the value added of the agribusinesses is on average 2.5 times higher than the agriculture sector value added in the period under review. This ratio is the smallest value reported by Xianhui and Yingheng (2010), Kamińska and Nawrocka (2016) and Cruz (2022). Moreover, the share of agribusiness in GDP has fallen sharply from 27.2% in 1986 to 17% in 2016. This result is comparable to Khaledi *et al*. (2019), who estimated the share of agribusinesses in the Iran's economy as a constant. The share of the agricultural sector in GDP has declined at a similar pace, but with a different trend. Both of the above findings are consistent with the results of studies conducted in different regions of the world.

The changes in the share of agribusiness components in the Iran's economy (Figure 2) imply that the food industry and agricultural services are the largest and smallest components of agribusiness in Iran, respectively. Also, the share of all three components of agribusiness decreased during the period 1986-95, but the pace of decline and the associated trend were different among the components. The changes in the components of agribusinesses can be better understood by looking at the share of each of these three stages in agribusinesses (Figure 3). The main points of the above figure can be summarized as follows:

1) The share of agricultural production in gross domestic product, consisting of agricultural and horticultural products,

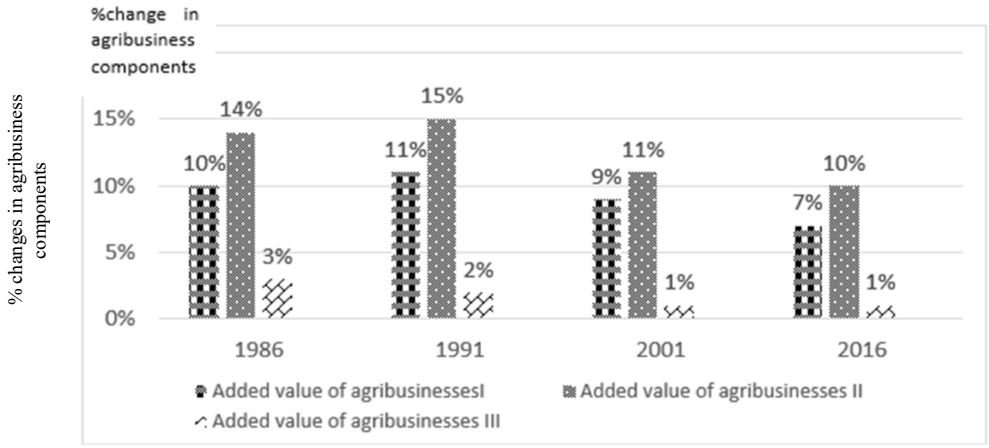

Figure 2. Changes in the share of agribusiness components in Iran's GDP: 1986-2016.

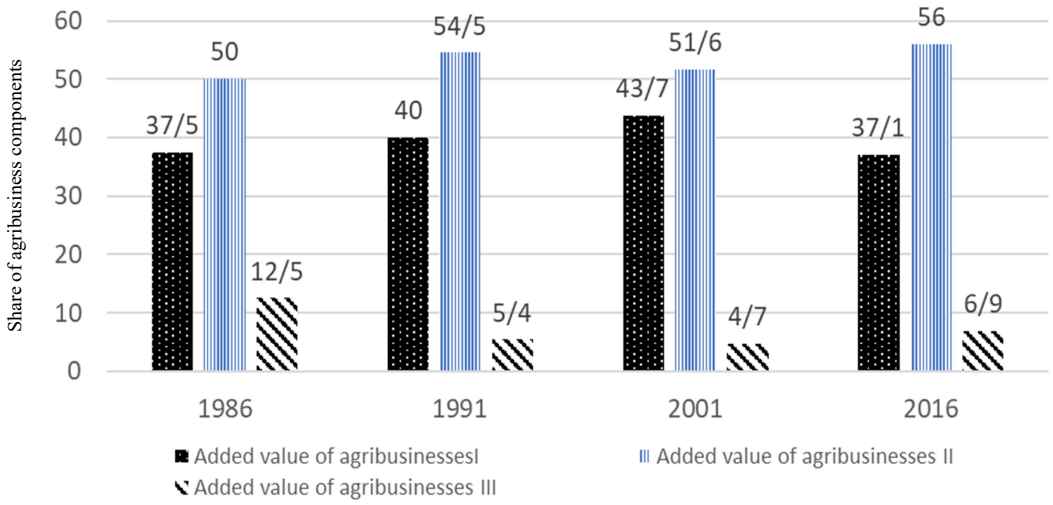

Figure 3. Shares of the three stages of agribusiness in Iran: 1986-2016.

livestock and poultry products, forestry and fisheries, has experienced a sharp decline, falling from 10.3% in 1986 to about 6.5% in 2016. This result seems to be completely contrary to the results of Kamińska and Nawrocka (2016) and Kamińska and Bajan (2019). This could be attributed to the nature of agricultural production in Iran (agriculture in arid and semi-arid regions), insufficient investment, low productivity as well as Dutch disease.

The slow and inadequate trend of capital formation in Iran's agricultural sector, which has been detected before (Gilanpour, 2013), can be easily verified in Figures 4 and 5. The gross capital formation and the estimation of the sector's net capital formation in Figure 4 clearly show the slow rate of capital formation in the agricultural sector, the pace of which has continued to slow down since 2013. It should be borne in mind that the Iranian currency (Rial)

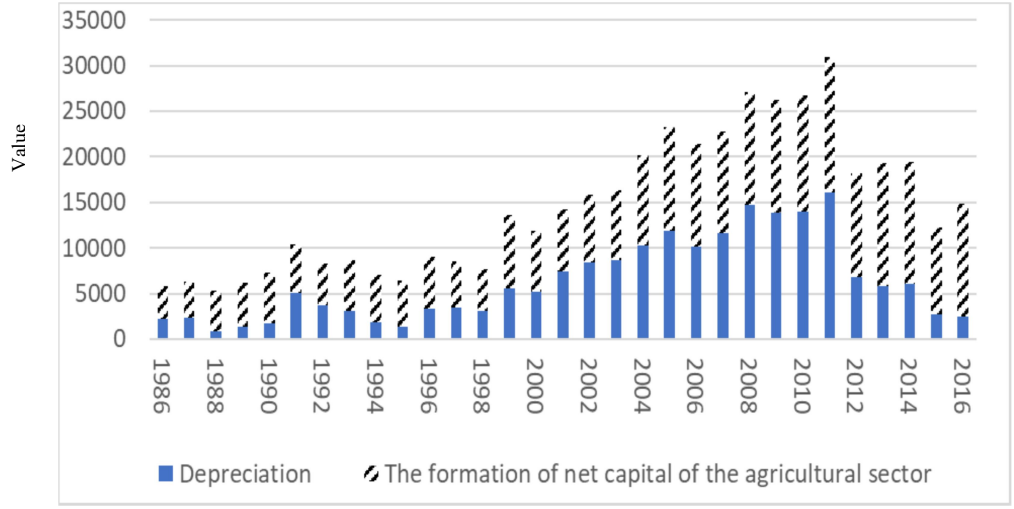

Figure 4. Gross fixed capital formation in the agricultural sector in Iran: 1986-2016 at constant 2004 prices (billion Rials).

depreciated against other world currencies during the period under review, and the actual rate of capital formation in the agricultural sector is even slower than that shown in Figure 4. In addition, capital depreciation has also accelerated to a great extent during this period.

Given that the lack of sufficient investment in Iran's economy is one of the main reasons for its slow economic growth, a comparison of the share of the agricultural sector in GDP and gross capital formation (Figure 5) reveals that the degree of backwardness of the agricultural sector in terms of capital formation is much greater than in other sectors of Iran's economy. More specifically, the share of the agricultural sector in gross capital formation was less than half of its share in GDP during the period under review. This feature deters building technological innovation capabilities, which is one of the most important driving factors for the development of agribusinesses.

The slow and constantly fluctuating trend of total factor productivity (Figure 6) is another important factor that can explain the declining share of agricultural activities in Iran's agribusinesses (a trend contrary to international experience). It should be noted that, in an effort to address these constraints and binding opportunities, UNIDO recognizes improving productivity in the agricultural sector as the first key driver (out of 7 requirements) to turn challenges into opportunities for agribusiness development (Yumkella *et al*., 2011).

2) The food industry in agribusinesses has the largest share in GDP (12.35% of GDP on average over the period). This is despite the fact that the share of this sector showed an upward trend (from 13.6% in 1986 to 15% in 1991) before falling to 9.8% in 2016. This is completely consistent with the result of Kamińska and Nawrocka (2016) and Kamińska and Bajan (2019), which were conducted for the 24 member states of the European Union and China, respectively. However, considering the slow pace of economic growth in Iran during the study period, a greater contribution of the food industry to Iran's economy was expected, which did not materialize. As mentioned above, the agricultural sector has also failed to provide sufficient inputs to the agricultural and processing industries. This may explain the unrealized growth of the agricultural and food processing industries. On the other hand, due to the resource-oriented nature of the Iran's economy

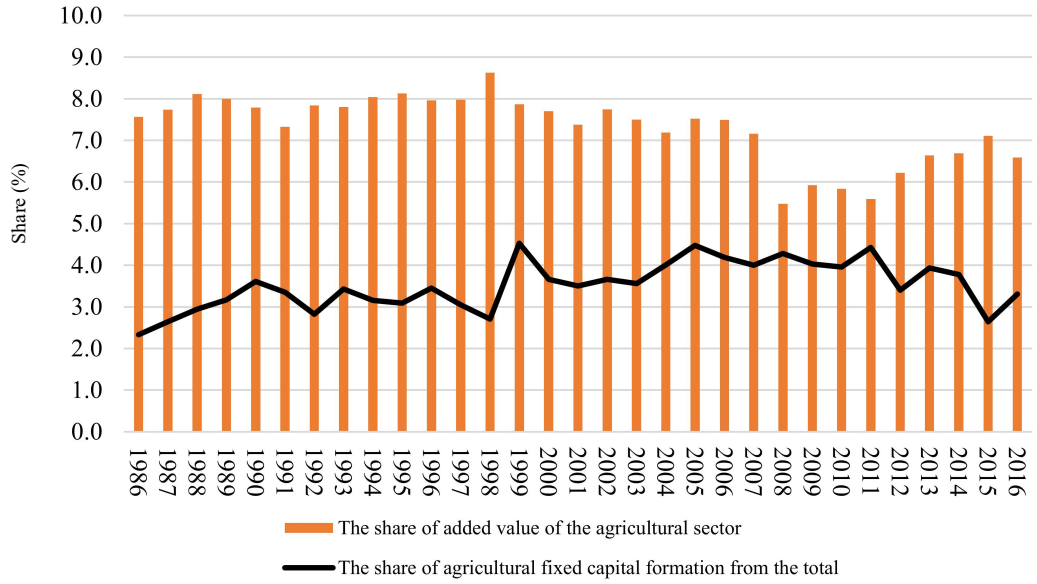

Figure 5. Share of the agricultural sector in gross fixed capital formation and share of the agricultural sector in GDP 1986-2016.

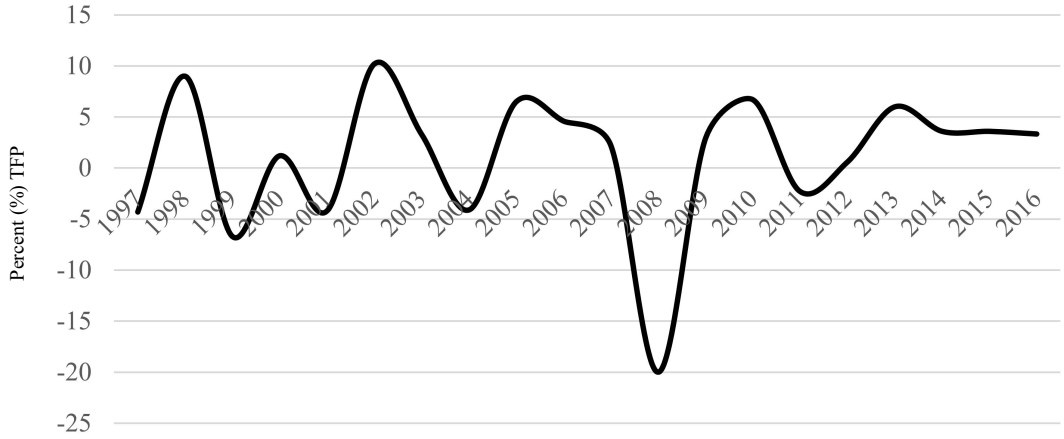

Figure 6. Total factor productivity growth in Iran's agricultural sector: 1986-2016.

(dependence on oil and mineral resources), public policies are mostly aimed at supporting related industries. In addition, the small scale of the food industry (of the approximately 11,200 food industry units in the country, about 56% are small-scale) makes access to new technologies to improve productivity virtually impossible. Furthermore, surging inflation in Iran's economy has dampened the purchasing power of households, reducing per capita consumption, and has led to a steady increase in production costs, reducing competitiveness in export markets. According to UNIDO, it is worth noting that exploitation of local, regional, and global demand is one of the key requirements for strengthening agribusiness.

3) The share of agribusiness support services in GDP fell from about 3.4% in

1986 to about 1.2% in 2016. This is contrary to the findings of Kamińska and Nawrocka (2016) and Kamińska and Bajan (2019), but it's behaviorally consistent with their findings given the downward trend of the agricultural sector value added. Kamińska and Nawrocka (2016) show that the share of support services in agribusinesses has a different trend in European economies. In the leading agricultural producing countries of Europe, such as France, England, Spain and the Netherlands, this share has an increasing trend, which is consistent with Kamińska and Bajan (2019) in the case of China. That is, the activities of the first stage of agribusiness, while dependent on the share of support services, has stimulated the growth of support services in the agricultural sector.

DISCUSSION

As shown above, the value added of agribusinesses is on average 2.5 times greater than that of the agricultural sector. Although this figure is the smallest among previous foreign studies, it indicates that the value added of the agricultural sector does not fully reflect the sector's position in the national economy. Therefore, it is necessary to consider the value added of agribusinesses as a macro-sectoral index in the national accounts.

Surveys have shown that the activities of the first group of agribusinesses (agricultural production) are the most important part of these businesses and act as the driving force for other agribusiness sectors. However, the agricultural sector in Iran has not been able to fulfil this role for a relatively long period, so that not only the share of agribusinesses has been declining in Iran's economy, but also the share of agricultural activities in all businesses has been descending. This phenomenon is partly due to insufficient investment in the agricultural sector. This not only dampens the share of agricultural value added in the national economy, but also leads to a faster decline in the share of agribusinesses in Iran's economy.

The share of agricultural food industry, the largest sector of Iran's agribusinesses, has been constantly declining, which is noteworthy for two reasons. First, although this trend is in line with international evidence, given the slow economic growth in Iran during the period under review, it was expected that the food and agriculture industries would grow faster than other industries. However, this has not been the case as the initial activities of agribusinesses (agricultural production) have not been able to provide the necessary resources. As a result, the lack of investment in agriculture has further limited the share of agribusiness in Iran's economy.

Meanwhile, the international sanctions have definitely been a major hurdle for Iran's agribusinesses to join the global value chains. Iran's arid and semi-arid climate and insufficient investment are two major factors hindering the provision of all inputs for the food and processing industry. However, Iran could have taken advantage of its geographical location to participate in global value chains, which would not only have expanded the size of domestic agribusinesses but also helped Iran to gain a larger share of the international food trade.

According to Yumkella *et al*. (2011), the promotion of value chains (regional and global) is the second requirement for agribusiness development. The processing of agricultural raw materials into agricultural and industrial products to supply global, regional and national value chains will lead to the production of products in compliance with specific standards, volumes and packaging requirements, at specific times and under precise procurement and timing. This would improve agribusinesses while facilitating technology transfer and private-public cooperation.

Changes in the share of support services in Iran's agribusinesses have been a major cause of the declining trend in Iran's agricultural value added, and is affected by this phenomenon. The consequences of

underinvestment in the agricultural sector are far deeper than what can be deduced from the value added of Iran's agriculture and can shrink the value added of the agricultural sector and its related agribusinesses, thereby jeopardizing Iran's food security.

However, this study serves as a first step in redefining the position of the agricultural sector in Iran's development path. The hypotheses proposed in this article can be challenged by a deeper look at Iran's economic development. In order to achieve this goal, it is necessary to measure agribusinesses in more detail.

Based on the issues discussed, the following policy recommendations are offered:

1. It is necessary to consider the value added of agribusinesses as a macro-sectoral index in the national accounts.
2. This requires a more accurate compilation of national I/O tables, including a more detailed breakdown of agricultural activities, horticulture, livestock and agricultural industries and, perhaps more importantly, activities related to domestic and foreign trade in related products and inputs. In addition, one of the main challenges in estimating agribusinesses with this methodology is the delayed publication of input-output tables. Therefore, agricultural policy makers could urge statistical centers to publish these tables at regular intervals.
3. Lessons from countries such as Brazil, Malaysia, and Thailand, which have pursued sustainable economic development through agribusiness development, imply that policy options are important to promote economic prosperity through agribusiness development as well as agricultural and industrial development. To this end, it is necessary to improve productivity by directing investment towards technology and innovation, expanding the use of fertilizers, introducing new crop varieties, and acquiring agricultural equipment consistent with Iran's climate. Key steps to facilitate agribusiness in Iran include promoting agribusiness through participation in national, regional and global value chains, meeting national, regional and international demand, strengthening technological innovation capabilities, gaining access to effective and innovative sources of finance, providing incentives for private sector participation, and rebuilding infrastructure.

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برآورد سهم مشاغل کشاورزی در تولید ناخالص داخلی ایران و تحلیل دلایل تغییر در اجزای آن

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چکیده

از دهه ۱۹۶۰ و با کاهش سهم بخش کشاورزی از تولید ناخالص داخلی در کشورهای مختلف، مفهوم کسب‌وکارهای کشاورزی برای نشان دادن جایگاه بخش کشاورزی در اقتصاد ملی بکار رفت. در این مقاله سهم کسب‌وکارهای کشاورزی در تولید ناخالص داخلی ایران با استفاده از جداول داده-ستانده سال‌های ۱۹۸۶، ۱۹۹۱، ۲۰۰۱ و ۲۰۱۶ برآورد شده است. بر اساس نتایج حاصله، سهم کسب‌وکارهای کشاورزی در تولید ناخالص داخلی حدود ۲.۵ برابر سهم تولیدات کشاورزی است (متوسط سهم کسب‌وکارهای کشاورزی در این دوره حدود ۲۳ درصد بوده است، در حالی که رقم مربوطه برای ارزش افزوده بخش کشاورزی حدود ۹.۲۵ درصد می‌باشد). در روندی مشابه با کشورهای در حال توسعه و توسعه یافته، سهم کسب‌وکارهای کشاورزی در تولید ناخالص داخلی از ۲۷.۲ به ۱۷ درصد در سال ۱۹۸۶-۲۰۱۶ کاهش یافته است، اما بررسی مؤلفه‌های تاثیرگذار بر کاهش سهم کسب‌وکارهای کشاورزی در ایران نسبت به سایر کشورها تفاوت‌های قابل‌توجهی را نشان می‌دهد که می‌توان به اقلیم خشک و نیمه‌خشک ایران، نرخ پایین تشکیل سرمایه، بهره‌وری پایین عوامل تولید و همچنین عدم مشارکت در زنجیره‌های ارزش منطقه‌ای و جهانی به دلیل تحریم‌های بلندمدت اعمال شده بر اقتصاد اشاره نمود.