AUSTRIAN AGRICULTURE IN THE FOOD VALUE CHAIN

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Abstract

Food and beverage are predominantly, but not exclusively, agricultural products. To a large extent – except in the case of final consumption by the farm family or direct marketing – goods are made ready for consumption through the cooperation of numerous actors in the food value chain. This paper offers insights on the (i) importance of agriculture for food production and (ii) its position in the value chain. The paper is based on official statistical data (Economic Accounts for Agriculture, Farm structure survey, National Accounts and Structural business statistics). Using these findings, the paper draws conclusions on areas necessary for further research.

Key words: *agriculture, economy, downstream economic sector, farmers' share, food value chain, marketing margin, upstream economic sector, Austria*

1. INTRODUCTION

One of the most striking features of economic development is the relative decline of the agricultural sector in Austria and the corresponding growth of other sectors. While continuing a slow growth in absolute terms, the size and importance of agriculture has decreased relative to the rest of the economy. Within the sector, there have been marked changes over time in the number and size of Austrian farms, the make-up of agricultural activities and the production and marketing strategies employed by farmers. With this background in mind, the agriculture, not only the Austrian, in the food value chain is a topic of immense importance. If there is to be sufficient food for 9 billion people by 2050 this must be incorporated into inclusive value chains. Moreover, the sharp wedge between trend changes in farm prices and consumer food prices has attracted considerable attention regarding the functioning and transparency of the food chain. This has also led to discussions on fairness, justice and equity (the terms are used interchangeably).

The largest component of Austrian agriculture was, and is, focused on the production of produce which is sold from the farm to be processed somewhere else before arriving on the consumers' dinner plates (Buxton & Tait 2012, Deloitte Touche Tohmatsu Limited 2013, Gereffi & Korzeniewicz 1994). Many view meat, for example, as the same regardless of how or where it is produced. These products are viewed as being undifferentiated. In the meat example, the commodity is transported to a slaughterhouse to be cut into schnitzel, loin, roast, sausages, minced meat etc. These products are often branded and eventually sold to consumers as differentiated products. The fact that others are adding value to commodities is one reason the farmers' share of the consumer food euro is smaller than it used to be. No matter how one may choose to differentiate one's product, doing so can have tremendous benefits. The returns from a pound of apricots sold as jam are much higher than selling a pound of apricots to a processor. However, all of that extra revenue does not come cheaply. It is costly to convert the apricots from the raw product to jam. It is also costly, in both euros and time, to market your jam. The food on the plate is gradually achieved through the cooperation of many enterprises in a value chain (Schäfer 1951), except direct marketing. Adding value from agricultural production to the consumer is a multi-stage process. Without value adding there would be no food value chain as we know it.

The perspective on the food value chain offers a theoretical framework to understand the integration of agriculture, and its operators or stakeholders, into the market system (Gereffi et al. 2001). The value chain was first developed as a business idea in the second chapter of "Competitive Advantage: Creating and Sustaining Superior Performance" by Michael Porter (1985). The term 'value chain'

describes a coordinated and collaborative chain where value is added along the various segments of the chain (Gereffi & Korzeniewicz 1994). The value chain is a full range of activities required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers and final disposal after use (Kaplinsky & Morris 2001). Value chains are market-led, with the private sector playing a central role in their development and success. Although much work has been done to define and conceptualise the idea of food value chain and similar programmes, the concept is still evolving.

Over recent years, there have been plenty of events and studies focusing on the value chain and its development. Various chain conceptualisations mentioned in the literature include: the filière approach (Raikes, Jensen & Ponte 2000), the linkage approach (Hirschmann 1958), Porter's value chain (Porter 1985), commodity/global commodity chain (Gereffi & Korzeniewicz 1994) and the global value chain analysis (Gereffi 1999). All of them deal with the flow of products and services along the chain, relationships between enterprises and co-ordination of production chains. The concepts applied in different studies (Giuliani 2015, Sinabell 2010, USDA 2015a, Wendt & Peter 2014, Wohlgenant 2001, El Benni & Hediger 2014, Reed et al. 2002) give evidence that the gap between the consumer expenditure and an associated farm value has been widening. Other ones try to explain the factors influencing the development (Department for the Environment and Rural Affairs 2004, Niemi & Jansik, 2005, Zachariasse & Bunte 2003).

Hence, in light of the renewed interest, this paper provides relevant insights into the position of agriculture in the Austrian food value chain. It approaches the issue from two sides: (i) what can be learnt from the developments shown by official statistics, and (ii) what has to be added to strengthen the position of agriculture in the food value chain. With these in mind, this paper (i) describes Austrian agriculture and the upstream and the downstream economic sectors, (ii) looks at the development of the farmers' share in total, for vegetable and animal produce, and finally (iii) outlines the key points for a well-functioning and transparent food value chain.

2. THEORETICAL BACKGROUND: DEFINITIONS

The production and economic focus of the agricultural sector and its upstream and downstream sectors is orientated directly or indirectly around the supply of consumers with consumables. In a few cases, agricultural products intended for human consumption are supplied directly to consumers by the farmers (Schneider 1980). For the most part, on the way to the consumer agricultural produce is transformed and value is added. Marketable goods for food are gradually achieved by the cooperation of many enterprises in a food value chain (Schäfer 1951). This section defines the concepts of farmers' share, marketing margin, the food value chain and its stakeholders.

2.1. Farmers' share and marketing margin

In the literature (OECD 1980, Schneider 1980, 1986, Wendt, Peter 2014, USDA 2015b) there are different ways to calculate the farmers' share over the consumer expenditure for food: (i) the sector-based (sometimes referred to as global) approach, (ii) the product approach and the functional approach (Sinabell 2010).

Generally, consumer expenditures for food products or total spending on food are made up of two parts besides the duties and taxes: (1) payments going to farmers which primarily represent the returns for the production of raw materials used in food products, and (2) payments going to enterprises that assemble and process the raw materials and perform other functions necessary to get food products to consumers in the form, time and place desired (Elitzak 1996, Orgen 1956). For the purposes of this paper the first group are referred to as farmers' share and the second one as 'marketing margin'. The marketing margin is the payment for a series of values added by the downstream economy. Without margin, not only the manufacturers and distributors, but farmers as well would be out of business. This sector-based approach compares the expenditure for food in total to the value of the agricultural produce contained within it.

The literature on farmers' share and marketing margin is closely related to the economic literature on value added functions (c.f. Bruno 1978). Traditionally, value-added in the case of agriculture refers most generally to manufacturing processes that increase the value of primary agricultural commodities (Amanor-Boadu 2003, AMRC 2015, Coltrain, Barton & Boland 2000, USDA 2015b). The value-added of a sector is defined as the difference between gross output and its intermediary inputs (European Commission 2009a).

2.2. Concept of food value chain

The whole value chain of food is a network of enterprises and stakeholders (Belussi & Arcangeli 1998; Deloitte Touche Tohmatsu Limited 2013). The value chains provide a theoretical understanding for this network approach (Deloitte Touche Tohmatsu Limited 2013, Powel 1990, Thorelli 1986). A value chain constitutes of a whole range of discrete, though interrelated, stakeholders, actors, partners, enterprises and activities involved in the design, production and marketing of a product from the field to the fork (Buxton & Tait 2012, Deloitte Touche Tohmatsu Limited 2013, Gereffi & Korzeniewicz 1994, Porter 1985). As Figure 1 shows, these include (1) production, e.g. grain and cattle, (2) processing, e.g. flour, bread, (3) distribution, e.g. wholesale, retail, (4) consumers and (5) governments, NGOs and public authorities. The latter monitor and observe the value chain from producer to consumer. (Deloitte Touche Tohmatsu Limited 2013) There is also the foreign trade as well as the economic sectors upstream of the production. The downstream economic sectors include processing, distribution and consumption.

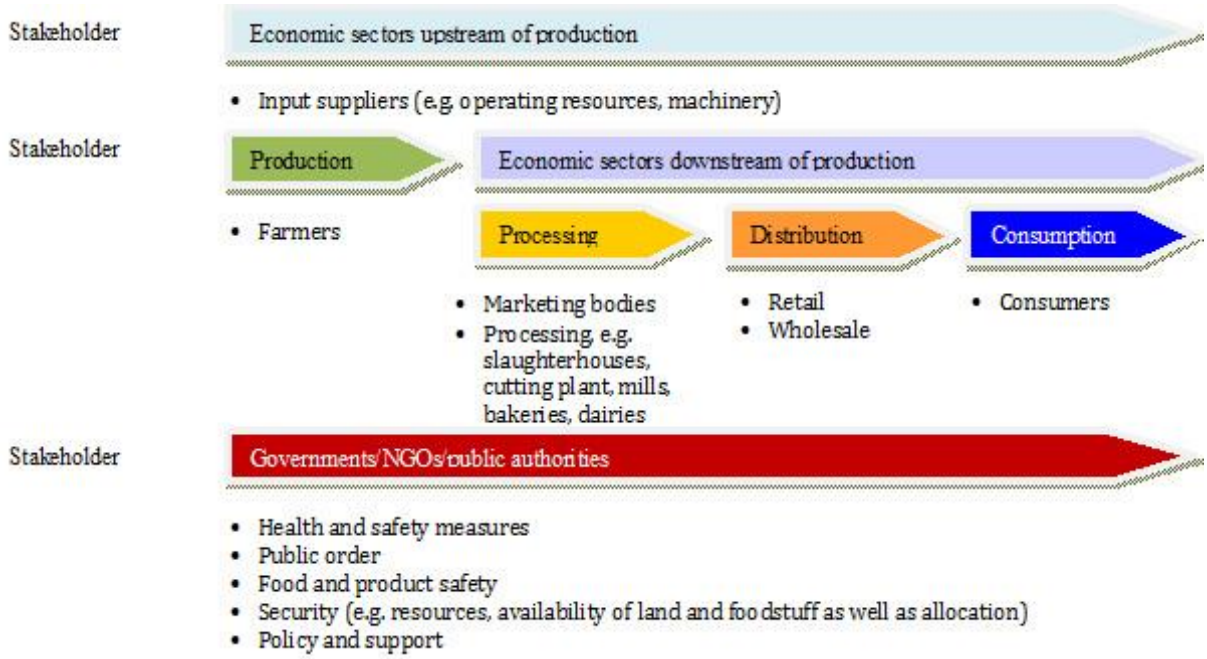


Figure 1. Stakeholder of food value chain

Source: based on Deloitte Touche Tohmatsu Limited 2013

3. METHODS

The data used to achieve the objectives of this paper was drawn from standardised, easy accessible sources WIFO (2016, 2017) and Statistics Austria (2016abcde, 2017abc). Although we strived to use strictly comparable data, this was not always possible due to varying changes over time in data compilation methods or calculation methods. The focus is on the description of the structure of the food value chain and the calculation of the farmers' share.

To learn more about the structure of agriculture and its upstream and downstream economic sectors secondary statistics have been derived from National Accounts (Statistics Austria 2017ab), Farm Structure Survey (Statistics Austria 2017c) as well as National Accounts and Structural Business Statistics (Statistics Austria 2016e).

The famers' share of the consumer expenditure for food is calculated by dividing the domestic value of agricultural produce for food by the domestic total consumers' expenditure for food (Sinabell 2010). The development of the farmers' share can also be illustrated in absolute terms and as an index. The calculation of the Austrian farmers' share for the period 1995 to 2013 is based on the method used by the Austrian Institute of Economic Research (WIFO) (Sinabell 2010). The following components and secondary statistics are considered in the calculation: (i) farm prices (Economic Accounts for Agriculture, Statistics Austria 2016a), (ii) annual domestic expenditure made by end consumers for food (National accounts, Statistics Austria 2016b), (iii) expenditure for eating out (Input-Output-statistics, Statistics Austria 2016c), (iv) self-sufficiency ratio, domestic food production (Supply balances, Statistics Austria 2016d) and the value added tax (VAT). Principally, the calculations merely highlight developments over time. Besides this, calculations show also the value added to agricultural produce on the way from the farm gate to the consumer. This is known as the marketing margin.

When interpreting the results, one has to bear in mind that the calculations (i) show developments and not their causes, (ii) provide no information on whether the actual incomes or returns in the agricultural sector or the downstream processing, trading and marketing sectors have increased or decreased, (iii) give no details on the cost categories or the shares at the different stages in the value chain beyond the farm gate (Quendler, Sinabell 2016).

The concepts of farmers' share and marketing margin need to be discussed realistically against the background of a dynamic and changing Austrian economy of which agriculture is a part. For in-depth knowledge further analysis of the results must consider the frame conditions, i.e. (i) the support from the government, (ii) the (average) degree of processing of the products, (iii) the consumers' habits and needs as well as (iv) the diversification of the range of products and so on. (Quendler 2016)

4. RESULTS

In order to get a more holistic picture of the food value chain in Austria different statistics are used. This section, firstly, deals with the description of agriculture in the economy and the up- and downstream economic sectors. Having considered the role of politics, the position of agricultures is described by looking at the Gross Value Added in the food value chain, the farmers' share and the development of the producer and consumer prices.

4.1. Austrian Agriculture in the Economy

To help to understand how the agricultural sector has fared and evolved over time relatively, Figure 2, provides the shares of the primary, secondary and tertiary sector in Gross Value Added of the Austrian economy. As seen, in 1996 the share of the primary sector was 2.2% or 3.6 billion euros. The sector share in 2006 stood at 1.2% or 3.9 billion euros. From 1996 to 2005, the share of agriculture decreased further to 1.1%. In the following period 2006 to 2012 the share named fluctuated between 1.0 and 1.2%.

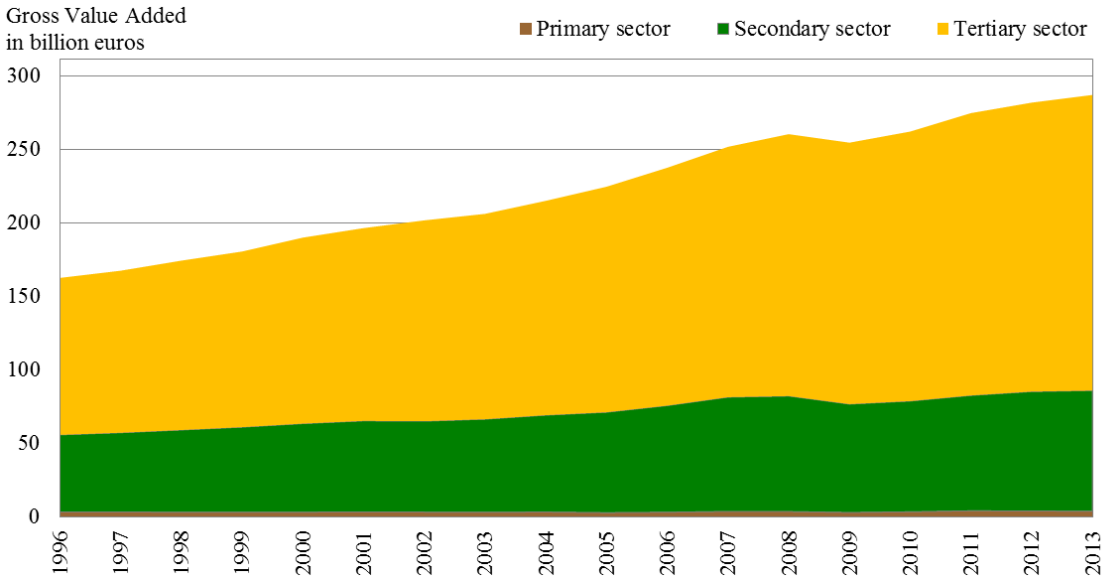


Figure 2. Share in billion euros of the primary sector, secondary and tertiary sector in Gross Value Added of the Austrian economy, 1996-2013

Source: Statistics Austria 2017a

Table 1. Share in billion euros of the primary sector in Gross Value Added of the Austrian economy, in %, 1996-2013

Year	agriculture and hunting	of which forestry and logging	fishing and aquaculture	Primary sector	Secondary sector	Tertiary sector
				1	2	3
	billion euros					
1996	2.79	0.83	0.01	3.62	52.46	106.69
1997	2.70	0.90	0.01	3.60	53.91	110.14
1998	2.58	0.94	0.01	3.53	55.83	115.17
1999	2.56	0.94	0.01	3.51	57.80	119.41
2000	2.65	0.86	0.01	3.52	60.18	126.48
2001	2.83	0.85	0.01	3.69	61.90	131.02
2002	2.65	0.89	0.01	3.55	61.81	136.53
2003	2.59	0.86	0.01	3.46	63.26	139.62
2004	2.73	0.85	0.01	3.59	65.86	145.77
2005	2.32	0.88	0.01	3.20	68.25	153.33
2006	2.47	1.01	0.01	3.49	72.47	161.72
2007	2.89	1.13	0.01	4.03	77.66	170.24
2008	2.89	1.05	0.01	3.95	78.50	178.09
2009	2.35	0.94	0.01	3.31	73.67	177.79
2010	2.67	1.08	0.01	3.76	75.25	183.30
2011	3.18	1.23	0.02	4.43	78.42	192.00
2012	3.08	1.23	0.02	4.33	81.16	196.46
2013	2.86	1.24	0.02	4.12	82.09	200.98

Source: Statistics Austria 2017a,b

It has been argued that agriculture's relative decline was primarily driven by the rapid growth of other economic activities, particularly the tertiary sector. While this is the case, it is also clear from Figure 2 and Table 1 that agriculture's relative decline was also partly due to its stagnant growth. For example, the sector grew very modestly at an annual rate of 0.4% during the period from 1996 to 2016, whereas the other two sectors recorded positive growth rates, around 2.0% and 2.6% per annum, during the same period. As seen in Table 1, next to agriculture, fishing and aquaculture, forestry and logging grew slightly from 1996 to 2013 aside from a few annual fluctuations. Therefore, when viewed independently, agriculture witnessed stagnant growth during the period under consideration, implying that, in addition to extra-sectoral factors, there have been also some intra-sectoral trends that have led to the declining trend in the sector's relative contribution to economy.

An important long-term indicator is the development of employment (Figure 3). Rapid technical progress has characterised agricultural production (Economist 2017, FAO 2002). The resulting expansion of production is only partially offset by an increased demand for foodstuffs. As a result, production factors, especially the demand for labour, are reduced in the agricultural sector.

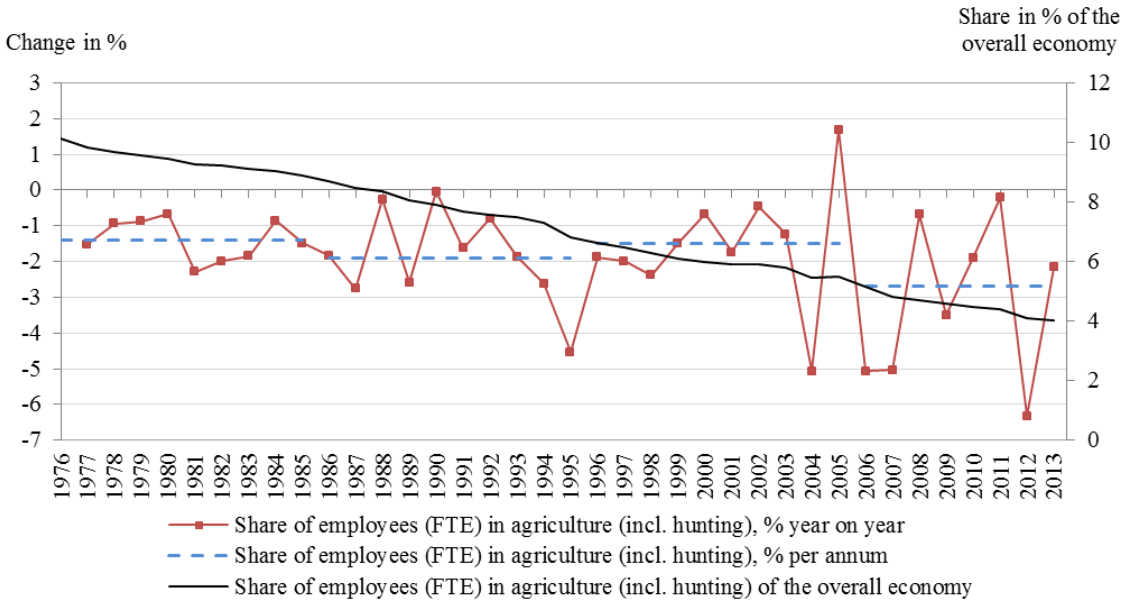


Figure 3. Development of the agricultural workforce as a percentage of total employment and the rate of annual emigration, 1976-2013

Source: WIFO 2017 based on National Accounts (Statistics Austria)

According to the average change per year there are four periods. From 1976 to 1985 the change of employees per annum was 1.4% followed by a period, between 1986 and 1995, of higher change with 1.9% per annum. Then it was again lessened and from 1996 to 2005 it was about 1.5 % per annum. The highest score was reached from 2006 onwards, namely 2.7% (blue lines in Figure 3). In contrast, the annual changes in % fluctuate considerably year on year. A clear negative trend is shown by the share of employee in agriculture of the overall economy. This share has continuously decreased from 10.1% in the year 1976 to 4.0% in the year 2013.

The development of the number of farms, the size of farms and the employee shows a profound structural change in Austrian agriculture (Table 2). A special feature of the situation in Austria is undoubtedly the high proportion of part-time farms. There were 166.3 thousands farms in 2013. This is a decline in the number of farms of 58.7% compared to 1951. In this context the number of persons in the holder's household declined by 70.5%. The Austrian agriculture is still rather small scaled. However, the trend towards lager farms has continued over the years. While in 1951 a farm had

managed an average cultivation area of 16.3 ha and a utilised agricultural area of 9.6 ha, an average area of 37.0 ha and 18.7 ha respectively was already being managed in 2013. With about 168.1 thousand annual working units (AWU), the input of labour in agriculture and forestry decreased from 1970 to 2013 by 62.3%.

Table 2. Long term structural development of the Austrian agriculture and forestry

Year/ marketing year	Agricultural and forestry holdings		Persons in the holder's household		Employee			Average size of holdings	
	in total (incl. farms without land)	of which part-time farms	in total	Share of population	in total[1])	in annual working units[2]) in total	in annual working units[2]) Share in overall economy	Cultivation area	Utilised agricultural area
	in 1,000	in %	in 1,000	in %	in 1,000	in 1,000	in %	Hectare per farm	
1951	432.80	28.70	–	–	1,624.00	–	–	16.30	9.60
1960	402.30	36.00	1535.80	21.80	1,148.70	–	–	17.90	10.40
1970	367.70	38.40	1523.10	20.40	798.60	446.20	14.60	18.40	10.50
1980	318.10	54.70	1295.30	17.20	602.70	324.50	10.40	20.60	12.00
1990	281.90	59.00	1057.00	13.80	507.40	275.10	8.70	24.00	12.60
1999	217.50	59.50	831.30	10.40	575.10	227.80	6.80	30.60	16.80
2010	173.30	54.20	452.80	5.40	413.80	179.90	5.00	36.30	18.80
2013	166.30	55.10	453.50	5.30	414.40	168.10	4.50	37.00	18.70
	Change in %								
2013/1960	– 58.7	–	– 70.5	–	– 63.9	–	–	107.0	79.3
2013/1970	– 54.8	–	– 70.2	–	– 48.1	– 62.3	–	101.4	78.7
2013/1980	– 47.7	–	– 65.0	–	– 31.2	– 48.2	–	79.9	56.2
2013/1990	– 41.0	–	– 57.1	–	– 18.3	– 38.9	–	54.3	48.2
2013/1999	– 23.5	–	– 45.5	–	– 27.9	– 26.2	–	21.1	11.0
2013/2010	– 4.0	–	0.1	–	0.2	– 6.6	–	2.1	– 0.4
	Growth in % per annum								
1960/2013	– 1.7	–	– 2.3	–	– 1.9	–	–	1.4	1.1
1970/2013	– 1.8	–	– 2.8	–	– 1.5	– 2.2	–	1.6	1.4
1980/2013	– 1.9	–	– 3.1	–	– 1.1	– 2.0	–	1.8	1.4
1990/2013	– 2.3	–	– 3.6	–	– 0.9	– 2.1	–	1.9	1.7
1999/2013	– 1.9	–	– 4.2	–	– 2.3	– 2.1	–	1.4	0.7
2010/2013	– 1.4	–	-	–	0.1	– 2.2	–	0.7	– 0.1
1951/1960	– 0.8	–	–	–	– 3.8	–	–	1.0	1.0
1960/1970	– 0.9	–	– 0.1	–	– 3.6	–	–	0.3	–
1970/1980	– 1.4	–	– 1.6	–	– 2.8	– 3.1	–	1.1	1.4
1980/1990	– 1.2	–	– 2.0	–	– 1.7	– 1.6	–	1.5	0.5
1990/1999	– 2.8	–	– 2.6	–	1.4	– 2.1	–	2.7	3.3
1999/2010	– 2.0	–	– 5.4	–	– 2.9	– 2.1	–	1.6	1.0
2010/2013	– 1.4	–	–	–	0.1	– 2.2	–	0.7	– 0.1

Source: WIFO 2017 according to Federal Ministry for Agriculture and Forestry, Environment and Water, Green report 2014; Statistics Austria, Farm Structure Survey, different years; Statistics Austria, National Accounts; Federal Institute of Agricultural Economics, note: [1]) professionally and casually employed; [2]) Employment in Annual Working Units (AWU) in agriculture, forestry and fishery according to National Accounts (from 1995 according to ESA 2010); [3]) Share of the Gross Value Added at basic prices of the agriculture, forestry and fishery of Gross Domestic Product (GDP); is calculated up to 1975 according to SNA 68; 1976-1994 according to ESA 95 (Rev. 2005, 2011), from 1995 according to ESA 2010; [4]) For updating using the minimum and maximum annual change.

4.2. Economic sectors up- and downstream of agriculture

Though much of the recent attention regarding competition in the food chain has focused on developments in retail markets (Handelszeitung 2016, WirtschaftsWoche 2016), some of the highest levels of concentration in the food value chain are to be found in upstream economic sectors of

machines and agrochemicals and downstream economic sectors without trading. Table 3 reports data based on the Structural Business Statistics. Since there was a shift in the classification of non-agricultural enterprises to the classification of structural services it was not possible to directly portray the development of up- and downstream economic sectors before 2005.

The number of enterprises has been developing similarly to the number of employees. Retail has been expanding the number of employees, but full-time equivalents cannot be shown on the basis of the performance and structure review. In the economic sectors directly downstream of agriculture, there was a sharp reduction in the number of jobs, while employment could be extended in the upstream economic sectors. The nominal Gross Value Added of the sectors viewed increased between 2005 and 2013 in all sectors, but the growth in the downstream economic sectors was relatively modest.

Table 3. Economic sectors up- and downstream of agriculture, 2005-2013

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2005/2013 % per annum
Enterprises (Number)										
Upstream machines & agro-chemicals[1])	175	175	177	152	140	142	142	147	144	– 1.8
Downstream without trading[2])	3,989	3,916	3,892	3,838	3,782	3,736	3,647	3,609	3,624	– 0.9
Downstream trading[3])	9,355	9,551	9,602	8,969	8,634	8,647	8,580	8,551	8,747	– 0.3
Sum of up- and downstream	13,519	13,642	13,671	12,959	12,556	12,525	12,369	12,307	12,515	– 0.5
Employed an yearly average (Number)										
Upstream machines & agro-chemicals[1])	6,627	6,817	6,906	7,177	7,137	7,111	7,301	7,585	7,677	+ 1.7
Downstream without trading[2])	71,264	71,164	71,213	71,906	71,928	72,325	71,965	73,702	74,737	+ 0.8
Downstream trading[3])	142,151	145,704	147,937	149,506	146,863	149,058	151,867	154,473	157,239	+ 1.4
Sum of up- and downstream	220,042	223,685	226,056	228,589	225,928	228,494	231,133	235,760	239,653	+ 1.2
Employees (full-time equivalent units)										
Upstream machines & agro-chemicals[1])	.	.	.	6,729	6,742	6,674	6,854	7,095	7,202	.
Downstream without trading[2])	.	.	.	60,822	60,568	61,146	60,682	62,002	62,668	.
Downstream trading[3])	.	.	.	10,945	10,577	10,320	10,298	10,313	10,486	.
Sum of up- and downstream	75,500	.	.	78,496	77,887	78,140	77,834	79,410	80,356	+ 1.0
Revenues (million euros)										
Upstream machines & agro-chemicals[1])	1,736	1,921	2,142	2,751	2,185	2,208	2,653	2,826	2,790	+ 5.5
Downstream without trading[2])	11,770	12,159	12,929	14,146	13,634	13,747	14,886	15,746	16,854	+ 4.3
Downstream trading[3])	34,126	36,060	37,889	37,613	36,756	38,398	41,135	42,807	43,830	+ 3.5
Sum of up- and downstream	47,632	50,140	52,960	54,510	52,575	54,354	58,674	61,379	63,474	+ 3.8
Production value (million euros)										
Upstream machines & agro-chemicals[1])	1,590	1,709	1,936	2,486	1,953	1,972	2,408	2,535	2,539	+ 5.4
Downstream without trading[2])	10,804	11,279	11,982	13,034	12,499	12,603	13,622	14,269	15,330	+ 4.1
Downstream trading[3])	9,825	10,610	11,419	9,419	9,541	9,913	10,351	10,637	10,944	+ 1.9
Sum of up- and downstream	22,219	23,599	25,337	24,939	23,993	24,489	26,381	27,442	28,814	+ 3.3
Gross Value Added (million euros)										
Upstream machines & agro-chemicals[1])	481	491	607	752	493	530	714	648	694	+ 4.4
Downstream without trading[2])	3,374	3,468	3,751	3,669	3,686	3,773	3,883	3,917	4,100	+ 2.6
Downstream trading[3])	4,803	5,017	5,464	5,160	5,136	5,544	5,769	5,933	6,040	+ 3.4
Sum of up- and downstream	8,658	8,976	9,822	9,582	9,315	9,847	10,366	10,498	10,834	+ 3.2

Source: WIFO 2017 according to Statistics Austria, note: Main results of the Structural Business Statistics grading into classes (4-Stellern) of ÖNACE 2008, several years; –[1]) Production of fertilisers and insecticides, Production of agricultural and forestry machinery; –[2]) Slaughterhouses, fish processing, milk processing, manufacture of grain mill products, production of feed; –[3]) Trade in agricultural commodities, trade in food (including food retailing). Due to the structural changes in ÖNACE, the scope of performance and structural statistics has also changed since ÖNACE 2008. The change of the Structural Business Statistics before 2008 to ÖNACE 2008 does not take into account these changes of the coverage area. This must be taken into account when interpreting and comparing the results with the Structural Business Statistics before 2008. In order to assess the size of individual ÖNACE categories, please refer to the conversion factors. In addition, economic areas, which are in the structure of the ÖNACE, but which were not entirely within the "old" coverage area (sections C-K of the ÖNACE 2003) of Structural Business Statistics, are not included in the tables. These are e.g. departments 39 (elimination of environmental pollution and other disposal) or 75 (veterinary).

4.3. Politics and other institutions

Many countries see problems within the food value chain and seek to regulate the market (European Commission 2017). For instance in the USA, the Federal Trade Commission (FTC) has intervened to slow concentration at the food retail level (Ramirez 2016). A sector inquiry by the Austrian Competition Authority (Bundeswettbewerbsbehörde, BWB) found out that: (i) the market power varies amongst different product-segments; (ii) in general, buyer power rises with the increase of the number of suppliers, the decrease of alternatives for the suppliers and the non-importance of brands (e.g., in the meat sector); (iii) the terms and conditions between suppliers and retailers often lack transparency, i.e. sometimes no quid pro quo, sometimes the services related to specific payments are rather unclear. This may result in a reduction on investment and innovation: (iv) wide spread practices have been observed in vertical and trilateral price fixing by food retailers and their suppliers. (OECD 2014) The European Union has established a High level Forum for a Better Functioning of the Food Supply Chain (in short HLF) with the involvement of Member States government representatives as well as agri-food and retail companies and stakeholders representing the chain (European Commission 2009b). This HLF will provide recommendations on how to improve the functioning of the value food chain. These could range from proposals for legislation to voluntary measures and/or systems agreed on between stakeholders. Many EU-countries have already adopted legislation addressing some of the elements contributing to a better functioning of the value chain (e.g. legislation on delays of payments in commercial transactions with specific provisions for perishable and short shelf life food products).

4.4. Farmers' share on consumer expenditure for food

The development of the farmers share is shown in Figure 5. In Austria the farmers' share declined continuously from 56.0% in the year 1950 to 28.0% in the year 2013. The farmers' share of animal products decreased from 79.7% to 21.0%, that of plant products from just 34.7% to 21.0% (Figure 4). Since the farmers' share varies between the different agricultural produces (e.g. vegetable, animal or milk, butter, meat etc.) changes in the market share of domestic products in total consumption can have a significant influence on the average farmers' share of the consumer expenditures for food (Schneider 1980, Wendt & Peter 2014).

Generally, the farmers' share of consumer expenditure on food in Austrian – as in other countries – declines steadily (Figure 4). The gap between farmers' share and marketing margin is widening. This has been also widely documented in various empirical studies both at the global level (Elitzak 2016, Giuliani 2015, USDA 2015a, Wendt & Peter 2014, Wohlgenant 2001) as well as at the product level (El Benni & Hediger 2014, Niemi & Jansik 2005, Reed et al. 2002).

The additional goods and services as value added to the agricultural produce by the downstream economic sectors become visible. The current trend shows that with increased prosperity the farmers' share declines. The causes are well documented (Department for the Environment and Rural Affairs, 2004; McCorriston, 2015). The two main reasons are (i) changes in the requirements of the demand side; in particular the demand for value added is more elastic than the demand for agricultural commodities; and (ii) changes in the price structure; specifically the prices for marketing services have increased more rapidly than agricultural producer prices.

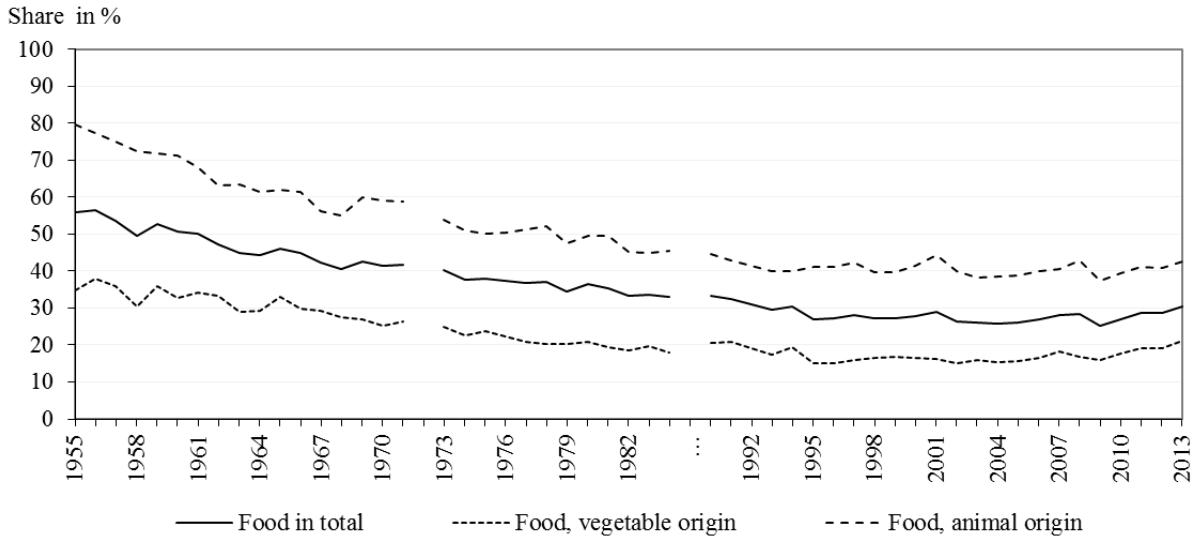


Figure 4. Austrian farmers' share on consumer expenditure for food in total, food with vegetable origin and food with animal origin, 1955-2013

Source: WIFO 2016

4.5. Additional issues

In arguing that the results tell us nothing about the bargaining power of farmers or any other segment of the food chain, the literature (DEFRA 2004, Niemi & Jansik, 2005, Tribl & Salhofer 2013, Zachariasse & Bunte 2003) generally identifies market power and the presence of non-competitive behaviour as the main cause of asymmetry in farm-retail price transmission. Consumer prices tend to be more stable than producer prices. Decreases in farmer prices are hardly transmitted in decreases in consumer prices, whereas increases in farmer prices are transmitted more quickly and more fully. However, this is not the only possible cause. Indeed, some authors relate imperfect price transmission to the existence of adjustment costs (labelling, advertising or goodwill), political intervention or inventory management. Public sector regulators must be prepared to ensure the resilience of their food supplies, provide a level playing field for farmers and the other stakeholders of the food value chain.

Furthermore, in the case of agriculture and food production, questions of fair treatment, fair revenue distribution and fair producer prices have gained new importance (Buxton & Tait 2012, Busch & Spiller 2015, Zachariasse & Bunte 2003, WFO 2013). As a result, from time to time media and civil society have entered into broad discussion on the topic. Citizens mainly sympathised with farmers, while food retailers were seen as the main culprits for the current development (Böhm & Schulze 2010). European Union politicians also got involved and the European Parliament published a resolution about the decreasing farmers' share in the European Union and the need to address the reduction of the farmers' share and the development of food markets (European Parliament 2009b). Furthermore, it was acknowledged that the role of farmers needed to be strengthened to maintain high quality food production and food security in the European Union. Also a discussion is going on about stabilising market prices and producers' income as well as enhancing transparency in the market and food value chain. (European Commission 2009ab, European Parliament 2009).

5. CONCLUSION

This paper presents the position of agriculture in the food value chain. It uses the statistics available so far. The results have importance for the societal and political discussion, as well as for marketing aspects. The developments in the Austrian agro-food chain outlined in this paper coincide with empirical findings in Western agro-food chains (c.f. Connor & Schiek 1997). Over the last decades we have seen an increasing concentration along the entire value chain, mainly in terms of number of enterprises (c.f. WFO 2013). The changes in the structure of demand go hand in hand with changes in the structure in agriculture, the downstream processing sectors and trade. The number of farms and enterprises has decreased over the period considered. Whereas the Gross Value Added has fluctuated over the years in agriculture, the upstream and downstream economic sectors show a steady increase. The level of employment in agriculture has declined significantly since 2005. On the other hand, there is a steady increase in employment in upstream and downstream economic sectors of agriculture. Furthermore, the findings confirm the continuous decrease of the farmers' share (national and international). The results for Austria are similar to those in comparable countries (Germany, Switzerland and USA). The reduction in the proportion of producers to consumer expenditure is due to several simultaneous developments. Therefore, improvements in the position of agriculture in the food value chain cannot be achieved by merely increasing the number of farms or the Gross Value Added of agriculture or farmers' share but also increasing the voice of the farmers is important for the acceptance of food chain systems. By highlighting a fair position and compensation for farmers further consumer segments could be exploited, e.g. local direct marketing.

The development in the food value chain gives ground for the following concerns:

In order to successfully compete in the market, an enterprise must create a significant added value for the consumer in order to play a central role in the value-added process. Agriculture is often exposed to the image of merely taking on a role of raw material producer in the value chain. As the calculations show, the value added in the food production is generated in the downstream stages of the food value chain. This perspective underestimates the 'real' value of agriculture: without agriculture there is not only no self-sufficiency with food, but there are also no multifunctional services.

Successful value chains depend on the willingness of all those involved – farmers, producer organisations, processors, traders, researchers, NGOs, government ministries – to communicate, coordinate and collaborate. Teamwork interdependence between farmers, food processors, distributers and consumers definitely exists. As a result, all stakeholders of the value chain should have an immediate and multi-facetted interest in the welfare of agriculture. Stakeholders should recognise that if we are to have a continuing prosperous overall economy, we need a prosperous farm economy. Moreover, it takes a healthy agriculture to supply the necessary quality and types of raw products for conversion into the kinds of processed foods needed to satisfy consumers' differentiation in tastes.

Partnerships are at the heart of inclusive, well-managed value chains. Further research is needed on how to (i) promote the voluntary and independent organisation of farmers, to group their products for sale (i.e. farmer cooperatives, producer groups or direct marketing, public-private partnerships); (ii) establish price and market monitoring observatories in order to improve the functioning and transparency in the food value chain; (iii) determine unfair commercial practices; (iv) promote the use of principles of fair dealing among the operators and stakeholders of the food value chain and (v) find out how to use agricultural produce and food more effectively.

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