



The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

GLOBAL TENDENCIES IN PORK MEAT - PRODUCTION, TRADE AND CONSUMPTION

István Szűcs¹ - Viktoria Vida²

¹University of Debrecen, Faculty of Economics and Business, Institute of Applied Economics Sciences,
Böszörményi street 138., Debrecen, Hungary 4032

²University of Debrecen, Faculty of Economics and Business, Institute of Applied Economics Sciences,
Böszörményi street 138., Debrecen, Hungary 4032

Abstract: World meat production is anticipated to stagnate in 2016, rising by a mere 0.3% to 320.7 million tonnes. Increases in output are expected in the United States, Brazil, the EU, India and the Russian Federation, while reduced production is foreseen for China, Australia and South Africa. Global meat trade is forecast to recover in 2016, growing by 2.8% to 30.6 million tonnes, which would represent a return to trend, after a fall in 2015.

World production of pig meat in 2016 is forecast to decrease marginally, by 0.7% to 116.4 million tonnes, thus registering a second year of virtual stagnation. As in 2015, lower output in China, which accounts for almost half the world total, is the main reason for the slowdown. An unfavourable feed-pork price ratio in the country and new environmental regulations have caused farmers to reduce breeding sows, stalling growth. China's production is projected to be 54 million tonnes, down 2.5% from the previous year. Elsewhere in Asia, the Philippines and Vietnam could boost output. Also, production in Japan and the Republic of Korea may expand, as the industry recovers from outbreaks of PED, which reduced piglet numbers in the previous two years. Recovery from the effects of PED has been faster in the United States, where a second year of growth is anticipated, when production could increase by 1.9% to a record 11.3 million tonnes. Output in Mexico also continues to recover, following a PED outbreak in 2014, and may rise in 2016 by 2.0% to 1.3 million tonnes. Pork meat trade could experience a second year of growth, increasing by 4.4% to 7.5 million tonnes – a record level. Lower international prices have stimulated trade. Most of the principal importing countries are anticipated to increase their purchases, including Mexico, China, the Russian Federation, the United States, Japan, the Republic of Korea and Australia. In response to rising demand, exports are projected to grow, in particular those of the United States, Canada, the EU and Brazil (FAO, 2016). Summarizing, in this study we wish to examine how evolve the world pork meat production, trade and consumption, and to demonstrate the main consuming countries, highlighting the role of China, as it is the most populated country in the world with its 1.4 billion inhabitants.

Keywords: meat production, trade pig sector, pork meat.

(JEL Code: Q13, Q12)

INTRODUCTION

Pork meat has played a major role in human food for thousands of years. Its production and consumption are related to the development of the production culture of agriculture. During the course of history it can be observed that with the increase in the level of agricultural production, the consumption of pork was also increased. Pig breeding is an outstanding livestock sector in every continent. Although many cultures do not consume pork (e.g. Mohammedans, Jews) according to their religious laws, but the pig livestock sector is the largest number in the world (BALOGH et al., 2000).

The market situation for the (pork) meat sector is generally characterised by high nominal output prices, underpinned on the demand side by rising incomes from rapid growth in the developing countries, and on the supply side by high input costs, notably for feed grains, energy related inputs and labour. The combined effect of higher output prices and increased

production costs tend to favour production in developing countries, where low input production systems prevail. Meat production growth has slowed, notably for poultry which in the past has experienced the highest rates of output increases. Meat demand in developing countries continues to be strong as higher incomes and urbanisation lead to food consumption changes favouring increased proteins from animal sources in diets. Consumption levels have risen substantially in many emerging economies, particularly in China and other fast growing Asian countries in the last decade (OECD, 2016).

This is the reason why we examine in detail the world pork meat market, because at present and in the future it will be one of the most important meat types in the human nutrition.

MATERIAL AND METHODS

This publication contains tables, figures and explanations in structure: production, trade (export and import data),

and consumption – as mentioned in the title. The current publication examines the role of pig meat in different countries of the world. To illustrate and describe the production, trade and consumption of pork, several databases were used. To demonstrate the world market for pig meat and on the European path we used reports of the USDA (United States Department of Agriculture), of the OECD, of the FAO (Food and Agricultural Organization of the United Nations), of the EUROPEAN COMMISSION. The data for the EU-28 were extracted from EUROSTAT database. Tables and graphs of this publication have been prepared on the basis of the publications materials and databases mentioned above.

RESULTS AND DISCUSSION

Pig meat production is 117 million tonnes in 2015, projected to grow 1.4%, reaching 127 million tonnes to 2025, or 36% of the world's meat supply (OECD-FAO, 2013). *Table 1.* represents the pork meat production, trade, utilization in 2015 and 2016 in the world.

Table 1: World pork meat production, trade, utilization (2015-2016)
1000 tonnes, carcass weight equivalent

Countries	Production		Import		Export		Utilization	
	2015	2016	2015	2016	2015	2016	2015	2016
Asia	66 425	65 181	3 957	4 107	220	200	70 410	69 133
China	55 392	54 017	1 583	1 661	127	102	57 078	55 617
Japan	1 254	1 280	1 286	1 325	2	2	2 545	2 605
Africa	1 365	1 364	302	303	33	34	1 635	1 632
Central America	1 840	1 869	1 048	1 147	158	178	2 730	2 837
Mexico	1 323	1 349	845	930	137	157	2 030	2 123
South America	5 662	5 769	192	188	864	948	4 990	5 009
North America	13 172	13 424	853	884	3 353	3 533	10 617	10 786
USA	11 121	11 334	605	647	2 164	2 262	9 510	9 731
Canada	2 051	2 090	244	233	1 188	1 272	1 103	1 051
Europe	28 266	28 276	538	598	2 545	2 596	26 260	26 279
European Union	23 354	23 279	13	12	2 416	2 488	20 951	20 803
Russia	3 069	3 139	415	478	34	35	3 450	3 582
Oceania	508	520	302	327	35	36	776	811
World	117 239	116 402	7 193	7 554	7 208	7 525	117 418	116 487

Source: own construction from FAO database, 2017

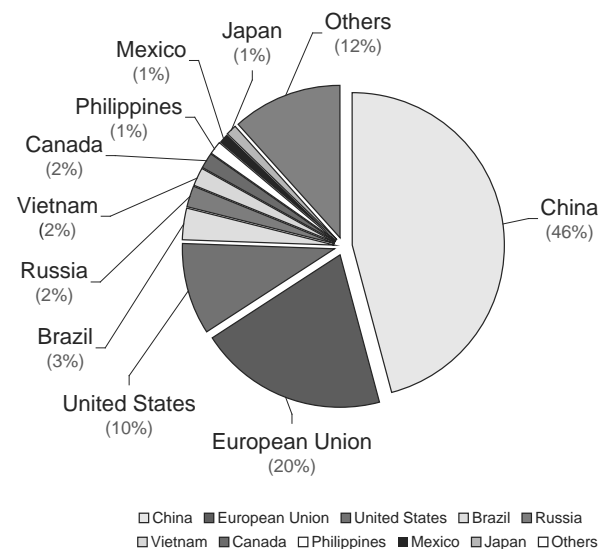
We can see in *Table 1.* the production of pork in 2015 is the highest in Asia (66 425 thousand tonnes), including China's largest production (55 392 thousand tonnes). Production of Japan is negligible. But from another point of view, it is interesting to note, that Japan alone produces nearly as much as the African continent. Japan imported the same amount of pork than it produces. Much of the production data of Central America (1.84 million tonnes) comes from Mexico (1.3 million

tonnes). In South America's production we can mention the pork meat production of Brazil (3.5 million tonnes), Chile (524 thousand tonnes) and Argentina (475 thousand tonnes). In North America the pig meat production gives the United States of America (11.1 million tonnes) and Canada (2 million tonnes). China has the biggest rate in the table, the second highest pork production has the European Union (23.3 million tonnes). Russia's pork production (around 3 million tonnes) means almost as much as two other continents: Africa and Central America.

According to the FAO's 2016 forecasts, total meat production in the world will increase to 320.6 million tonnes, including pork production (116.4 million tonnes), which will continue to represent the highest share, but poultry production (116.2 million tonnes) is close to pig meat and it is projected to even exceed it in the coming years (FAO, 2016). According to the mid-term projection of USDA by 2025, USA pig meat emissions can reach 12.6 million tonnes by 2025.

The TOP-10 countries are playing the most important role in the global pork meat production that is demonstrated in the *Figure 1.* According to the available data, the share of the TOP-10 producer countries is app. 88% from the global pork production. We have to highlight the role of China, because its share (46%) is higher than EU and the US production together.

Figure 1: Share of Top-10 pork-producing countries from the global production



Source: own construction from USDA FAS, 2017; FAO, 2017 in print
Anonymous 1.

Pig meat production will also grow after 2016, driven by China, where herd size is expected to stabilise after years of substantial reductions (a drop of 25 million pigs between 2012 and 2015). Another factor contributing to China's output expansion in the coming years is further consolidation of the pork sector (OECD-FAO, 2016).

Trade in pig meat in 2016 is expected to experience a second year of growth, increasing by 4.4 to 7.5 million tonnes

– a record level. Lower international prices have stimulated trade (FAO, 2016).

Among the largest pork exporters, the European Union (2.4 million tonnes) can be mentioned, followed by the United States (2.1 million tonnes) and Canada (1.2 million tonnes). From the forecast of OECD-FAO, 2013 the United States would see the most significant increase in pork export volume by 2022 followed by the European Union, Canada, and Brazil. EU exporters have adjusted to the 2014 Russian Federation embargo by seeking alternative markets, in particular in Asia, especially China. Conversely, Brazil, which was not subject to the ban, has experienced a substantial rise in exports to the Russian Federation, which, as a single destination, may constitute as much as half of Brazil's external sales of pig meat in 2016 (FAO, 2016).

The largest importing countries are China (1.5 million tonnes), Japan (1.2 million tonnes), Mexico (0.8 million tonnes), USA (0.6 million tonnes) and Russia (0.4 million tonnes).

The largest consumer of pig meat is China (57 million tonnes), EU member states (20.9 million tonnes) and USA (9.5 million tonnes). China is the largest producer of sheep meat and pig meat in the world, yet also imports large amounts of both types of meat. Over the next decade, China is projected to further increase its domestic production of meat as well as it imports (OECD-FAO, 2016).

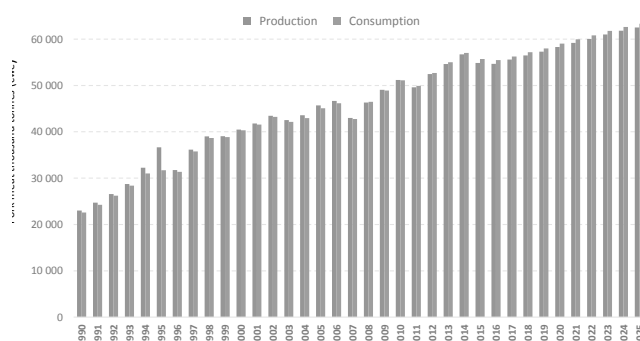
Below are the 15 countries that exported the highest dollar value worth of pork during 2016: Germany: US\$4.3 billion (15.9% of total pork exports), United States: \$4.2 billion (15.5%), Spain: \$3.6 billion (13%), Denmark: \$2.6 billion (9.6%), Canada: \$2.4 billion (8.7%), Netherlands: \$1.8 billion (6.5%), Brazil: \$1.3 billion (4.9%), Belgium: \$1.3 billion (4.8%), France: \$878.6 million (3.2%), Poland: \$837 million (3.1%), Ireland: \$483.8 million (1.8%), Mexico: \$432 million (1.6%), Austria: \$409 million (1.5%), Chile: \$372.8 million (1.4%), Hungary: \$355 million (1.3%). The listed 15 countries shipped 92.8% of all pork exports in 2016. Among the above countries, four increased the value of their pork exports since 2012: Ireland (up 26.9%), Spain (up 18.4%), Mexico (up 13.3%) and Brazil (up 0.1%). The other 11 countries posted declines in their exported pork sales led by: France (down -27.7%), Belgium (down -24.7%), Denmark (down -21.4%) and Austria (down -20.2%) (WORKMANN, 2017).

If we look at the *Table 1*, again, we can see that China, the European Union and the United States are most likely to determine the world market for pork, whether it is production, trade or consumption. These three countries account for 76% of world market production and 74% of consumption. It is no coincidence that per capita consumption of pork is the highest in these countries.

Further analysing China's pork production and consumption, we can conclude, that in China not only the production, also the consumption shows increasing tendency (*Graph 1*). The forecasts show that after the stagnation in 2016, 2017 has started with a slow growth, driven by population growth and increased demand for pork meat. For 2020 the production and consumption level will reach 60,000 tonnes. Consumption continues to exceed production, which is already

the case since 2011. Overall, from *Figure 2*, it can be stated that the production and consumption of 2025 will be about three times higher as in 1990s, which means enormous growth.

Figure 2: China pig meat production and consumption (1990-2025)

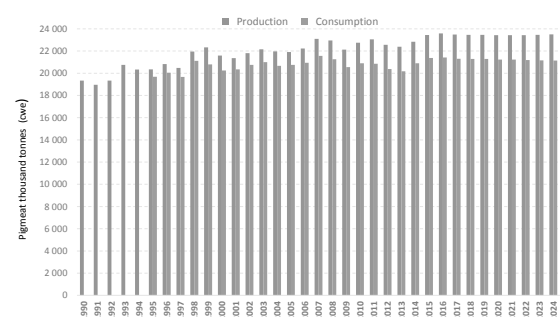


Source: own construction from OECD database, 2017

The swine industry strives to continually improve production capacity over time in China. China is an emerging major player in the world pork market. In 2014, domestic production and consumption reached historical highs (*Figure 2*), representing over 45% of world totals. China's market presence is not only due to its leading position in pork production, but also increasingly due to the volatility it introduces to global trade balances and prices through import fluctuations. Over the past decade, China's domestic production and consumption has been increasing, although net trade has oscillated significantly (FAO, 2016).

It has already been stated that the European Union is the world's second largest producer of pork and the largest exporter. In the past 10 years, a slight decrease in the total number of pigs was observed in the European Union, due to low profitability and economic regulation, which had a negative effect on small farms. A similar trend is expected in the coming decade, pork production will only grow to a small extent (*Figure 3*).

Figure 3: EU pig meat production and consumption (1990-2025)



Source: own construction from OECD database, 2017

From EUROSTAT, 2017 in 2015, the livestock population in the EU-28 was composed of 148.7 million pigs, it was

approximately 1.7 times as high as the population of cattle. The largest pig population is in Spain (28 367 thousand pigs), significant proportion of the EU's pig population still in Germany (27 652 thousand pigs). The number of pigs in France has been steadily decreasing since 2005. While in 2005 there were 15 123 thousand pigs, it dropped by 13% by 2015, while last year France's pig population was only 13 307 thousand pigs. The number of pigs in Denmark (12 702 thousand pigs) and in the Netherlands (12 453 thousand pigs) is constantly increasing.

Table 2: The EU's pork meat production by country (2005-2015)
1000 tonnes

Countries	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Austria	509	505	531	526	533	542	544	530	528	526	528
Belgium	1013	1006	1063	1056	1082	1124	1108	1110	1131	1118	1124
Bulgaria	75	75	76	47	38	37	48	49	52	54	61
Croatia	135	137	156	148	78	89	88	86	80	69	73
Cyprus	55	53	55	59	58	57	55	52	49	43	43
Czech Rep.	380	359	360	336	285	276	263	240	234	236	228
Denmark	1793	1749	1802	1707	1583	1666	1718	1604	1589	1594	1599
Estonia	38	35	38	40	31	32	33	36	37	41	42
Finland	204	208	213	217	206	203	202	193	194	186	192
France	2274	2263	2281	2277	2004	2010	1998	1957	1939	1944	1968
Germany	4500	4662	4985	5114	5241	5443	5598	5459	5474	5507	5562
Greece	130	123	122	119	118	114	115	115	109	96	90
Hungary	454	489	499	460	389	416	387	346	337	369	409
Ireland	205	209	205	202	196	214	234	241	239	254	276
Italy	1515	1556	1603	1606	1588	1633	1570	1621	1625	1328	1486
Latvia	38	38	40	41	25	23	23	24	26	28	29
Lithuania	106	106	99	76	41	55	59	59	67	67	66
Luxembourg	11	10	10	10	9	10	10	10	11	12	12
Malta	9	8	8	9	7	8	7	6	6	6	6
Netherl.	1297	1265	1290	1318	1275	1288	1347	1332	1307	1371	1456
Poland	1926	2071	2091	1888	1608	1741	1811	1695	1684	1838	1906
Portugal	327	339	364	381	373	384	384	362	346	360	377
Romania	466	468	491	455	222	234	263	282	308	325	330
Slovakia	140	122	114	102	70	69	57	54	52	34	45
Slovenia	32	34	33	31	24	25	23	21	19	20	20
Spain	3168	3235	3439	3484	3291	3369	3469	3466	3431	3620	3855
Sweden	275	264	265	271	261	263	256	233	234	236	234
United Kingdom	706	697	739	740	720	772	806	825	833	862	898

Source: own construction from EUROSTAT database, 2017

The quantity of pig meat produced in the EU-28 stood at 23.0 million tonnes in 2015. Cultural/religious particularities may explain many of the differences observed in their structure of livestock rearing and meat production. For example, Turkey is a largely Muslim country and as such many of its citizens abstain from eating pork. The same is true in some of the Balkan countries, for example, in parts of Kosovo, Bosnia and Herzegovina and Albania (EUROSTAT, 2017).

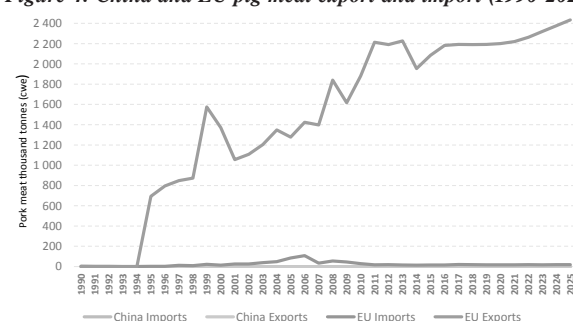
This is the reason why in Table 2. we concentrate only the European Union members pork meat production in 2005-2015, not the whole Europe.

According to Table 2. among the EU Member States, the three largest producers are Germany (5.5 million tonnes), Spain (3.8 million tonnes) and France (1.9 million tonnes) in 2015. There is a minimum difference between France and Poland (1.9 million tonnes) pork production, followed closely by Denmark (1.6 million tonnes), the Netherlands and Italy (1.4 to 1.4 million tonnes). Hungary is the 11th place in the ranking. With 150 million pigs and a yearly production of about 22-23 million tonnes carcass weight the EU is the world's second biggest producer of pig meat after China and also the biggest exporter of pig meat and pig meat products. The EU has a self-sufficiency of about 111% and exports about 13% of its total production. Most of the EU's pig meat exports go to East Asia, in particular China (EUROPEAN COMMISSION, 2017).

In Figure 4. we compare China and the European Union export and import data. The export data of the European Union are seen from 1995, the other data are from 1990. Based on the OECD data that the EU, as the world's largest exporter of pork has doubled the export data from the year 2000 by 2016. In the future, there will be a slowly growing trend until 2025 when it reaches 2400 thousand tonnes. The import of pork meat in the EU is negligible, it does not reach 20 thousand tonnes. China's pork meat export is also at a lower level, it is around 300 thousand tonnes, and it will be slightly reduced in the future. The pork meat import of China started to grow from 2008, and China maintained the increasing trend from this year. The majority of EU pork meat exports transported to China and Hong Kong.

Highly populated Japan and China incurred the highest deficits in the international trade of pork. In turn, this negative cash flow highlights Japan's and China's competitive disadvantage for this specific product category but also signals opportunities for pork-supplying countries that help satisfy powerful Asian consumer demand (WORKMAN, 2017).

Figure 4: China and EU pig meat export and import (1990-2025)



Source: own construction from OECD database, 2017

Considering the export-import data of EU, it can be concluded, that almost half of the export delivered to China. Another major target markets were Japan and Hong Kong, Japan 10%, Hong Kong rose 31% in exports. In the future, we can expect significant changes, because on 6 July a consensus was reached on the Japan-EU Economic Partnership Agreement (JEEPA). The terms of the agreement offer significant benefits to the European pig meat industry, as Japanese tariffs on EU imports will be cut significantly. Pig meat is already the primary EU agricultural export to Japan. For UK producers, Brexit will prevent the full benefits of this trade deal from being felt directly. Nonetheless, if the close trading relationship between the UK and EU is maintained, any boost to demand for EU pork, and support to prices, could also be felt here in the UK. For example, Denmark is the largest EU supplier to Japan and some of the cuts are similar to those shipped to the UK (WILKINS, 2017).

After we analysed the production and trade of pork meat, we can move up to the consumption of pork. Table 3. shows the total consumption of meat in the world by meat type. The most consumed meat in the world is poultry, far behind the pork (there is exactly 1 kilogram of difference between the two meat types in 2015). The third most popular type of meat is the beef and veal (6.43 kilogram/capita/year), this is half of the pig or poultry consumption. The sheep meat consumption is very low (eight times less than poultry consumption, and more than seven times less than pork consumption), because it is consumed only in parts of the world more often.

According to the OECD forecast in Table 3. we can see stagnation in case of the pork, the beef and veal and the sheep meat, the kilogram/capita/year consumption increasing negligible from 2015 to 2025. Only poultry meat shows a nearly 1 kg increase in the future from 13.4 kilogram/capita/year to 14.2 kilogram/capita/year. One of the main reasons for this may be that, the world's population grows in those countries where the consumption of pork is subject to religious restrictions, therefore, the poultry comes to the fore.

Table 3: World meat consumption (facts and forecast: 2015-2025)
Kg/capita/year¹

Appellation	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Poultry meat (rtc) ¹	13,48	13,65	13,78	13,83	13,86	13,93	13,98	14,03	14,09	14,14	14,20
Pig meat (cwe)	12,48	12,43	12,43	12,46	12,49	12,50	12,51	12,52	12,53	12,54	12,54
Beef and veal (cwe)	6,43	6,49	6,50	6,51	6,56	6,58	6,60	6,62	6,63	6,65	6,67
Sheep meat (cwe)	1,71	1,72	1,73	1,75	1,77	1,80	1,82	1,84	1,86	1,87	1,89

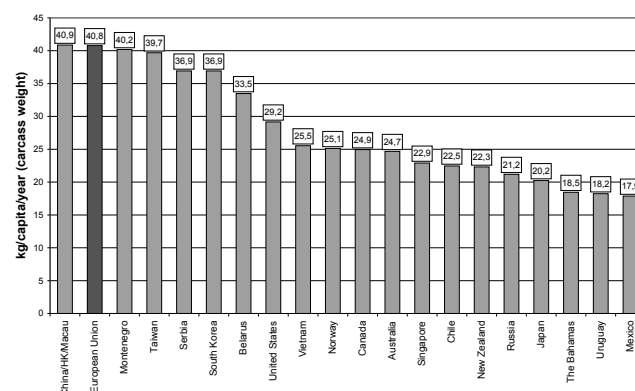
Source: own construction from OECD database, 2017

The level of pork consumption shows significant various

¹ c.w.e. is carcass weight equivalent, r.t.c. is ready to cook equivalent.

by country and region. The next graph (Figure 5.) demonstrate data of the TOP-20 countries in case of per capita pork consumption.

Figure 5: Per capita pork consumption in the TOP-20 countries (kg/capita/year; carcass weight)



Source: own construction from USDA FAS, 2017; FAO, 2017 in print Anonymous 1.

According to the USDA (2017) and FAO (2017) data the shares of meat types from the global meat consumption is the next (2015): pork 40.1%; poultry 34.1%; beef 21.0% and mutton/goat 4.8%.

If we look closer to pork meat consumption data in Table 4., we can see, that in North America the major meat type is poultry, the second the beef, and only on the third position can we find the pork meat. In the forecast period (from 2013-2015 to 2025) only poultry meat can show significant growth, in case of beef and pig meat consumption we can see stagnation, and consumption of sheep meat will decrease. Latin America and Caribbean is the same situation.

In Brazil the pork meat consumption is increasing 2 kilogram/capita/year from 2013-2015 to 2025. One of the reasons for this is the Russian embargo. The EU could not deliver to Russia, so Brazil taking advantage of the situation, became one of Russia's major suppliers. After the restriction was lifted, and the EU member countries also deliver to Russia, Brazil uses the remaining pig livestock, and pork meat for boosting internal consumption.

In Africa the meat consumption level is very low compare with the other continent. We can see a slight increase of beef and veal and sheep meat consumption, and the poultry consumption will stagnate to 2025. The pork meat is the least consumed meat type, due to religious restrictions (e.g. Jewish, Muslim religions).

In relation to the consumption of pig meat in the EU Member States, it can be stated that it is high level in worldwide (nearly 33 kg/capita/ year), also significantly exceeds the world average (12.5 kg/capita/ year). This is largely due to the fact that European culture traditionally prefers pork consumption. According to FAO's latest data, the highest pork consumption in 2013 is in Austria and Germany (51-52 kg/capita/ year) and in Spain (49 kg/capita/ year), Poland (46 kg/capita/ year), Italy (40 kg/capita/ year), the Netherlands (36 kg/capita/ year), France (33 kg/capita/ year). Overall, the consumption level of pork is high in

the European Union biggest pig producer countries, an exception is Denmark, where it does not reach the level of consumption of 25 kg/capita/ year. Not only here, but also in 17 other Member States, it is not reaching the level of consumption of the EU average (Belgium, Denmark, Estonia, Finland, France, Greece, Hungary, Ireland, Latvia, Malta, the Netherlands, Portugal, Romania, Slovakia, Slovenia, Sweden, United Kingdom). Each Member States - without exception –reach the world's average per capita consumption of pork. Despite these high pork consumption values, when we look back we can say that in recent years, consumption levels have fallen in almost every country. Most of the lost pork meat was replaced by poultry meat because in the EU there is a general tendency for the consumption of poultry meat to rise at the expense of pork.

Table 4. Per capita meat consumption by country and region
(facts and forecast)
Kg/capita/year, carcass weight equivalent

Appellation	Time period	Beef	Sheep	Pork	Poultry
North America	2013-15	24,43	0,44	21,14	44,33
	2025	24,80	0,39	22,55	48,25
Brazil	2013-15	25,62	0,40	11,36	38,37
	2025	25,74	0,37	13,13	42,88
Latin America and Caribbean	2013-15	17,18	0,54	9,51	30,81
	2025	17,08	0,55	10,33	33,76
Africa	2013-15	3,90	2,31	0,98	3,90
	2025	3,96	2,40	1,07	3,85
European Union	2013-15	10,61	1,83	32,17	22,11
	2025	10,49	1,86	32,36	23,67
Asia and Pacific	2013-15	2,91	1,73	12,81	8,47
	2025	3,36	1,99	13,24	9,44
BRICS	2013-15	4,35	1,63	16,02	10,22
	2025	4,73	1,94	16,96	11,43

Source: own construction from OECD-FAO Agriculture statistics database, 2017

In Asia pork being the continent's most popular protein source. It can be observed for all types of meat that the consumption (according to the forecast in Table 4.) is growing.

Per capita pig meat consumption in China was 38 kg in 2012, up 13% in ten years (FAO, 2016). Some studies suggest refrigerators² have led to an increase in meat purchases by allowing consumers to store meat longer, making consumption more convenient and practical. The effects of refrigerator ownership on home pork meat consumption have not been widely studied, even though this has been a major trend in China for many years. The OECD-FAO, 2013 outlook suggests that meat demand in China will continue to increase over the next ten years but these projections may over or underestimate actual growth depending on the net effect of

2 The increase in refrigerator purchases is explained in part by rising household incomes, but also by subsidised consumer purchases. Purchases of refrigerators were subsidised in Shandong, Henan and Sichuan Provinces from late 2007 and were implemented throughout China by early 2009. Refrigerator ownership has expanded most rapidly in rural areas.

increased household refrigeration. In rural China, the potential for increased household refrigeration is still very large. If, for example, the net effect is positive, there could be a stronger expansion in future meat demand than might otherwise be expected based on price, income and diet trends. Greater than anticipated increases in meat demand would lead to higher prices of meats in China as well as some combination of increased meat production, with more use of grain and oilseed meal in feed, or more meat imports compared to the current Outlook projections (OECD-FAO, 2013).

Another reason of this high per capita pork meat consumption is, that pigs have been at the centre of Chinese culture, cuisine and family life for thousands of years. Pork is the country's essential meat. In Mandarin the word for "meat" and "pork" are the same. The pig is one of the 12 signs of the Chinese zodiac: those born in that year are said to be diligent, sympathetic and generous. Pigs signify prosperity, fertility and virility. Poems, stories and songs celebrate them. Miniature clay pigs have been found in graves from the Han Dynasty (206BC-220AD). Historians think people in southern China were the first in the world to domesticate wild boars, 10,000 years ago. Almost every rural home once had a pig, not least because, well into the Communist era, the animals were part of the household recycling system. From trotter to tail, the Chinese eat the whole hog. Still, for much of China's history, pigs were a luxury consumed only rarely, sometimes extremely rarely. That has changed dramatically. The average Chinese now eats 38 kg of pork a year (roughly a third of a pig), five times more per person than they ate in 1979. Until the 1980's 95% of Chinese pigs came from smallholdings with fewer than five animals. Today just 20% come from these backyard farms, the other come from industrial facilities, often owned by the state or by multinationals, produce as many as 100,000 swine a year. The government established the world's first pork reserve (to support the eating pork), some of it in frozen form and some the live. This aims to keep pork affordable and reasonably priced: when pigs become too expensive, the government releases some of its stock onto the market; if they become too cheap, the reserve buys more porkers to keep farmers in profit. Other pro-pork policies include grants, tax incentives, cheap loans for farms and free animal immunisation - all intended to boost intensive pig farming and to keep plates loaded high with Chinese pork. The ambition of China continues to be to devour as large a slice of the pork pie as possible (LUXI COUNTY, 2014).

China desire for pork has serious consequences for the country's economy and its environment, also for the world.

Among developing countries, Asia continues to occupy a key position in overall consumption growth. In China, the world's largest meal consumer, demand by the livestock sector (both the poultry and pig industry) is expected to grow at a slower pace. In most other Asian countries, consumption could keep expanding at about average rates (FAO, 2016).

In the longer term, in Asia's fast growing consumption the principal driver of production is demand, with time lags associated with biological and technical limits depending on the type of meat. The demand for meat is determined by many

factors, including cultural habits and religious observances. These factors do not change much over a decade. For example, India is largely a vegetarian country, and its per capita meat consumption is less than 5 kg per capita r.w.t. p.a. People in many countries do not eat pig meat at all. Location also affects meat demand, as for instance in coastal areas or near large bodies of water, where the local population may have greater access and appetite for fish and related products. Countries with specific types of pasture land and climate may raise more sheep. Population demographics may also play an important role. People in cities tend, although not in all cases, to eat more meat than in the countryside. Countries in fast transition to higher urban and lower rural populations may see meat consumption rising more rapidly. Changing age structure affects the evolution of consumption as older people tend to consume less than younger people. In the context of globalisation and the so-called westernisation of diets, key drivers of meat demand are real prices and incomes (OECD-FAO, 2013).

Overall, the global demand for meat is growing, but at different rates in different regions. In Europe and the United States (the biggest meat producers in the 20th century), consumption is growing slowly, or is even stagnating. On the other hand, the booming economies in Asia and elsewhere, will see around 80% of the growth in the meat sector by 2022. The biggest growth will be in China and India because of huge demand from their new middle classes (MEAT ATLAS, 2014).

SUMMARY

Summarizing the production, we can conclude, that China's pork production is defining. Alone is larger than Europe's, North and South America's pork production combined. From this we can conclude that China's pork production trend has a significant impact on the world's production of pork and, in fact, alone can influence the development of world pork production (e.g. more than half of the world's feed crops will soon be eaten by Chinese pigs).

It has already been established that the European Union is the world's second largest producer of pork and the largest exporter. In the past 10 years, a slight decrease was observed in the total number of pigs in the European Union, one reason is the low profitability and economic regulation, which have a negative effect on small farms. There will be a similar tendency in the coming decade, pork production will only grow slightly, the causes are declining prices, environmental aspects and the expected slow decline in EU consumption. Despite this, the EU will continue to produce for export for the purpose of world demand, favorable feed-in tariffs and to increase the competitiveness of the EU pigmeat sector.

These are the reasons why we examined in detail China and the EU pork meat market, as right now and in the future they will be the most decisive in the pork. China is the largest pork producer and consumer in the world (EU is the second largest producer, and the biggest exporter), they have a significant impact of world pork production, trade and consumption as well.

REFERENCES

- Anonymous 1. (2017): PorkCheckoff, <http://www.pork.org/pork-quick-facts/home/stats/u-s-pork-exports/top-10-pork-producing-countries/#worldexportshares>
- BALOGH P. – NÁBRÁDI A. – SZŰCS I. (2000): A sertéshús-termelés gazdasági kérdései. ISBN: 9799633562993. Szaktudás Kiadó Ház Zrt.
- BETHAN WILKINS (2017): „Japan to reduce tariffs on EU pig meat”. In: Agriculture and Horticulture Development Board (AHDB). <http://pork.ahdb.org.uk/prices-stats/news/2017/july/japan-to-reduce-tariffs-on-eu-pig-meat/>
- DANIEL WORKMAN (2017): „Pork Exports by Country”. May, 2017. <http://www.worldstopexports.com/pork-exports-by-country/>
- EUROPEAN COMMISSION (2017): Agriculture and rural development - EU Meat Market Observatory - Pigmeat
- EUROSTAT (2017): Statistical books - Key figures on enlargement countries, 2017 edition. ISBN 978-92-79-62167-3. Publications office of the European Union, Belgium. 74-75 p.
- EUROSTAT statikus táblák: https://www.ksh.hu/docs/hun/eurostat_tablak/index.html
- FAO: Food and Agricultural Organization of the United Nations (2016): Food Outlook - Biannual Report On Global Food Markets. ISSN 1560-8182 (Online). June 2016. 44-46, 109p. <http://www.fao.org/3/a-I5703E.pdf>
- LUXI COUNTY J. (2014): “Swine in China - Empire of the pig”. In: The Economist. ISSN: 0013-0613. Published by Economist Newspaper Ltd. 2014.12.20. <https://www.economist.com/news/christmas-specials/21636507-chinas-insatiable-appetite-pork-symbol-countrys-rise-it-also>
- MEAT ATLAS (2014): Facts and figures about the animals we eat. Published by Heinrich Böll Foundation, Berlin and Friends of the Earth Europe, Brussels. January, 2014. 10, 24-25 p. https://www.foeeurope.org/sites/default/files/publications/foee_hbf_me-atlas_jan2014.pdf
- OECD-FAO (2013): Agricultural Outlook 2013-2022. ISBN 978-92-64-19422-9. OECD Publishing. 99-103 p.
- OECD-FAO (2016): Agricultural Outlook 2016-2025 Special focus: Sub-Saharan Africa. ISBN 978-92-64-25323-0. OECD Publishing, Paris. June, 2016. 107-108 p.
- USDA (United States Department of Agriculture) (2016): Agricultural Projections to 2025. February 2016. <https://www.usda.gov/oce/commodity/projections/>

