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THE ROLE OF RETAIL SECTOR IN TAIWANESE MACRO-ECONOMY

Content:

Abstract

Beyond a comprehensive review on Taiwan's retail sector, the main objective is to analyse the role and the influence of the sector in the Taiwanese macro-economy. The first issue is getting a picture in Asia (special in Asia – Pacific region) of retail trends. To examine this question the author made some comparisons between Asian and European) and beside the obvious similarities, a number of significant differences were found.

The other main question this study was focused on is the present and future consumption challenges which influence Taiwan's future retail sales opportunities as well. From GDP point of view the author pointed out the issue of the high tight relationship and growing dependence on mainland China (the People's Republic of China), which one of the main drivers of the long term economic development to strengthen Taiwan's competitiveness and mitigate the risks of brain drain and low birth-rate on the economy. It looks evident that Taiwan is ahead of using the state of the art sales technology and results of the digitalization. Taiwan can enhance global competitiveness if it focuses to the growing domestic consumption as well maintaining the balance of central budget.

Key words: APAC, Taiwan, consumption, competitiveness, retail, digitalization, GDP

Introduction

Taiwan is one of the most dynamic economies in the region, which is driven largely by industrial manufacturing, and especially exports of electronics, such as semiconductors, machinery, and petrochemicals. This heavy dependence on exports exposes some volatility of the economy due to fluctuations in global demand, such as increasing competition from China.

Important landmark was the signing of Economic Cooperation Framework Agreement (ECFA) with China in June 2010. Taiwan in July 2013 signed a free trade deal with New Zealand - Taipei's first-ever with a country with which it does not maintain diplomatic relations - and, in November of that year, inked a trade pact with Singapore. However, follow-on components of the ECFA, including a signed agreement on trade in services and negotiations on trade in goods and dispute resolution, have stalled. In early 2014, the government bowed to public demand and proposed a new law governing the oversight of cross-Strait agreements, before any additional deals with China are implemented; the legislature has yet to vote on such legislation, leaving the future of ECFA uncertain[1]. Taiwan moves to greater economic integration with South and Southeast Asia and has also expressed interest in Taiwan joining the Trans-Pacific Partnership as well as bilateral trade deals with partners such as the US.

Largely because of the low level fertility rate (just over one child per woman) or aging of population (people over 65 expected to account for nearly 20%) raising the prospect of future labour shortages, falling domestic demand, and due to all of these declining tax revenues. The restricted labour force also explain why Taiwan focus on intensive skill driven industries and services, thanks to the economic policy the country runs a trade surplus with many economies, so its foreign reserves are the world's fifth largest.

It is very important issue the nature of relationship with China. China became Taiwan's second-largest source of imports after Japan, and China is also the island's number one destination for foreign direct investment. Closer economic links with the mainland bring opportunities for Taiwan's economy but also pose challenges as political differences remain unresolved and China's economic growth is slowing, and besides the discussion of the nature of political relationship is not part if this survey.

The survey contains the parts of next themes:

Firstly it is described of Asian retail trends demonstrating the importance of the results of digital age, the influence of the expansion of e-commerce.

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[1] Central Intelligence Agency (2018): The World Fact Book - Taiwan

One of the presented research method and considered theoretical school stems from the Keynesian multiplier, which is the ratio between output variation and the initial exogenous variation of aggregate demand.[2] The primer assumption is on the Keynesian Multiplier that the consumption is a linear of current income. The marginal propensity to consume means that out of one additional dollar (or forint) of disposable income the people spend and save some part.

The other used method to analyse the role of retail sector in Taiwan is the input – output model. The Leontief input-output model formulated as a generalized econometric complementary problem. Input conditions for the existence of solutions are given, and solution results are based on assumptions. An application of the model to figure out the regional effects is suggested. This is a basic introduction to the input-output analysis, which was founded by Vassilii Leontief in the 1930s.

The main goal of the research to examine and analyse the role of retail sector in macro-economy, helps to understand how retail consumption contributes to the economic growth in Taiwan.

1. Methods of research

The analysed macroeconomic issues are at the center part of Taiwanese economy policies. It is used many types of data to measure the performance of Taiwanese economy. In this research three macroeconomic variables are especially important: real gross domestic product (GDP), the income accounts for the sources of households' spending and savings, and the consumption denotes the money people spent for buying goods and services. It is studied how these variables are determined, how they change over time, and how they interact with one another and the retail sector's performance on macro level. It is worked out the model to help explain economic variables, such as GDP, income, and consumption. The used economic models illustrate the relationships among the retail consumption's variables. It is examined two kinds of variables from retail point of view: endogenous variables and exogenous variables. Endogenous variables are those ones that a model tries to explain, such as retail spending. Exogenous variables are those ones that a model takes as given, such as income. The goal of the presented models is to show how the exogenous variables affect the endogenous, although the retail consumption on one side come from outside the model, such as in the multiplier analysis and other side serve as the model's input, whereas endogenous variables are determined inside the model, so the retail consumption is the model's output, such as in equilibrium calculation.

[2] Benassy-Quéré A., Coeuré, B., Jacquet, P., and Pisany-Ferry, J. (2010): Economic Policy, Oxford University Press, pp. 180-181.

The main sources of primary data analysis provided by:

- National Statistics of Republic of China (Taiwan)
- Ministry of Economic Affairs, R.O.C.
- GfK Retail and Technology Taiwan Ltd.
- World Economic Forum: The Global Competitiveness Report 2017–2018
- The Nielsen Company: Quarter By Numbers
- Fung Business Intelligence: Asia Retail
- TEMAX
- Reports

The role of the retail and the influence of this sector are analysed in term of method, such as:

- Trend analysis
- Benchmark analysis
- Keynesian consumption theory and the equilibrium
- The multiplier effect of consumption based on input – output table

This research presents many different methods that address different questions and that make different assumptions as can be found next parts:

1.1. Consumption analysis

In this subchapter it is analyses how Taiwanese households decide how much of their income to consume today and how much to spend in retail? This microeconomic question addresses the answer for macroeconomic consequences. It is examined how households' consumption decisions affect the way the economy in the long run and in Taiwan. The study of study consumption relies on techniques of data regression analysis. The aggregate data on the behaviour of the overall economy come from the national income accounts of National Statistics of Republic of China.

Keynes conjectured that the marginal propensity to consume - the amount consumed out of an additional dollar of income – is between zero and one[3]. The ratio of consumption to income, called the average propensity to consume, so income is the primary determinant of consumption. The consumption, so the retail spending as well is determined by the level of production and the distributed income to households, as disposable income. One of the main goals of the research to show how economic equilibrium change in the market for goods and services in Taiwan due to the retail and

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[3] N. Gregory Mankiw, Macroeconomics, 5th, Worth Publishers, p.433.

consumption. The supply and demand for the economy's output. The following equations summarize the examinations of the demand for goods and services in the research.

$$Y \ = \ C \ + \ I \ + \ G.$$

$$C \ = \ C(Y \ - \ T).$$

The demand for the economy's output is measured by GDP, which comes from partly consumption, and consumption depends on disposable income; retail spending is the endogenous variables from this point of view.

portion of the additional income accrues to consumers

portion of the additional income consumers accrues to buying products or services

share of disposable income leads household to consume of domestic and imported goods

The detailed relationships are calculated in Chapter 3.2.

1.2. Input Output model to retail sector analysis

In the applied Leontief's input-output model there are four measures of changes in regional economic activity that can be estimated—gross output of different sectors, value added, earnings, and employment. The crucial question is how the retail sectors' intermediate relationships can be quantified in the national input-output model. The method used in this research is to use the national level sector metrics (such information are available in the Statistical Office database), and calculated coefficients can be figured out upon national level statistics. In addition to understanding the effect of assumptions in the input–output model, it is important to quantify the macro level effects by using the model's multipliers. Each of the additional one NT$ of demand for the buying of a sector results both indirect and direct income effects on the economy as a whole, so the linkage between the initial spending and the total effects generated by the spending is known as the multiplier effect of the sector, or more generally as the impact of the sector on the economy as a whole[4]. For this reason this study of multipliers could be called as impact analysis.

In this survey multipliers are used to figure out the secondary effects of retail sector in Taiwan. Indirect effects are the changes in sales, jobs and income within supplier industries in the country, i.e. businesses that supply goods and services to tourism-related firms. The economic mechanism that causes an initial reaction to be amplified by follow effects among suppliers is the examined indirect

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[4] O'Connor R., Henry E. W., (1975): Input-Output Analysis and its Applications. Griffin's statistical monographs and courses. Charles Griffin and Company Ltd, London and High Wycombe, p. 42.

multiplier effect, regardless of whether the shock arises change in technology or financial market[5]. For example, retail companies purchase a variety of goods and services in Taiwan in order to sell products, these indirect effects are described by Type I multipliers.

$$\text{Type I sales multiplier } = \text{ (direct sales } + \text{ indirect sales)}/\text{ direct sales}$$

The additional income that ultimately gets to households is called disposable income, which explains, the induced effects. These evoked effects are the changes in income in Taiwan, resulting more consumption because of retail spending. Employees in the service sectors and supplier industries are spending their income in Taiwan, thus causing additional sales and economic activity. Type II multipliers integrate both indirect and induced effects.

$$\text{Type II sales multiplier } = \text{ (direct sales } + \text{ indirect sales } + \text{ induced sales)}/\text{direct sales.}$$

The main findings of research are compared to benchmark countries where the statistical methods are not differentiated resulting significant distortion in analysis.

2. Retail outlook in Asia

Asia comprises many countries, each with different geographic, economic, political, cultural and social sphere. Consumer preferences and buying habits are different; there is no such thing as an "average Asian consumer". However, rising disposable incomes across the region has given rise to a new group of consumers – the fast-growing middle class. Asia's consumer market is and will continue to be driven by preferences of the exploding middle class, particularly the growing, influential younger consumers in the region.

The rise of e-commerce has redefined shopping and revolutionized retailing in the APAC (Asia Pacific) region. The researches prove, that APAC is better positioned and hosts five of the top ten most attractive retail markets globally[6]. Structural issues such as consumption upgrades, technological advancement and cyclical trends are pulling APAC's offline brands/retailers in varying directions. Consumers in China (including Taiwan) and South Korea are fully embracing online, with those in Singapore and Hong Kong lagging, while Japan and Australia are moving at a tepid pace as preference for offline retail remains high. Consequently, retailers in China, Taiwan and Korea need to be proactive by adopting an omni-channel (integrated online/offline) strategy in order to stay relevant, while their

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[5] Acemoglu, D. et al. (2016): Macroeconomics, Pearson, p.313.
[6] APAC Retail and Property, Deutsche Bank Markets Research, p.1.

counterparts in other markets face less imminent pressure and are able to co-exist with rising online retail (in selected products) or to develop online on their own.

Department stores have felt most severely the rise of e-commerce, with its portion of total retail sales shrinking from 10-12% to 3-9% across countries between 2007 and 2016. Few brands/retailers in APAC have demonstrated successful online strategies. Fast Retailing's vertical model and self-run store format has allowed it to develop a seamless online module.

In the digital era, consumers are more connected, tech-savvy, mobile and socially fluid. They demand personal products and services, look for greater satisfaction in life experience and have a strong desire for convenience and immediacy, rather than merely static material possessions.

2.1. Retail snapshot to selected countries

In this part is given a brief outlook for selected countries' retail performances. The main figures of retail sales and internet sales of selected Asian economies are shown in Table 1.

Table 1: Retail sales and Internet sales of selected economies in Asia, 2016

	Retail sales (US$ billion)	yoy growth (%)	Internet sales (US$ billion)	yoy growth (%)	Share of internet sales in retail sales (%)
China	2,016.7	8.1	347.4	33.9	17.2
Japan	947.2	0.9	67.7	8.5	7.1
South Korea	234.3	7.8	43.0	20.4	18.4
Taiwan	90.8	2.6	8.9	12.5	9.8
Singapore	21.9	-1.7	1.1	33.1	4.8

Source: Euromonitor International; compiled by Fung Business Intelligence

China is largest country in the region, notwithstanding the middle level standard of living (Table 1) it is the leader in e-commerce (especially mobile commerce), and the offline retailers remain the victim. It is expected the future supply of retail space in China remaining ample even after fast growth over the past decade, but rapid growth of ecommerce (in 2016: 33,9%) will continue to put overall unit rent and rental yield under pressure. The relative high level traditional retail sales increasing (in 2016: 8.1%)

indicates, that mall operators with strong execution will continue to grasp the strong demand through proactive adapting to the new competitive landscape by adjusting their tenant mix (e.g. more F&B and experience shops that online shops cannot replicate).

In Japan new store openings have slowed down due to the rise of construction and labour costs as well as the rebalancing of offline/online store portfolios by current players. Traditional retail in department stores have been particularly affected on both sales and earnings by the growth of e-commerce, while their fall has already begun since the beginning of the deregulation of location controls on large commercial facilities since 1990. The threat of e-commerce has also reached areas such as shopping centres and train-station fashion buildings, which used to be considered relatively secure[7].

The Korea e-commerce market is estimated to expand at 20.2% CAGR until 2021, significantly outgrowing the overall retail industry. It is expected the Korean e-commerce market to remain fragmented with no clear winner, while a number of leading players compete, due to non-dominant player, limited M&A opportunities, and solid financial capabilities of major traditional retail participants.

In Singapore retail sales have shown declining in 2016, but after it, the rise in retail sales was mirrored by an aggressive build out of retail space.

Singapore continues being challenged by growing e-commerce and abundant supply. The recovery in the underlying economy and the positive outlook for residential market should see a cyclical recovery in retail in Singapore. Because of the very concentrated traditional retail department stores the share of e-commerce is relatively low (4,8%) compare to other regional countries.

Very relevant the difference between traditional and internet selling growth rate discernible in Taiwan, the figures are evaluated separately in Chapter 3.

2.2.   Illustration to retail business developments

What happen behind the data? In the next part such trends, retail business developments are illustrated, which show well how the retail being changed in selected countries in Asia.

- **Changing society**

People in the societies can be divided into upper, upper middle, middle, lower middle, working and lower classes. With huge growth potential, the middle class in Southeast Asia and India is expected to double to 400 million and 540 million respectively in 2020, implying strong impetus for further consumption growth in both economies. In China, the middle class, which is far larger in size compared to those of Southeast Asia and India, is estimated to grow 25% to hit 1 billion in 2020, representing

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[7] Deutsche Bank Markets Research, APAC Retail and Property

about 70% of the urban population in the country and becoming a major powerhouse for domestic consumption growth[8].

In the digital era, consumer buying habits and preferences are significantly affected by high Internet penetration, ubiquitous availability of information and rapidly-growing social media networks. Today, consumers in Asia are digital-savvy, mobile and socially fluid. They are highly connected and demand omni-channel experiences where they can shop anytime, anywhere and with any devices. They also demand personalized products and services, look for greater satisfaction in life experience and have a strong desire for convenience and immediacy, rather than merely static material possessions.

- **Digitalisation**

Online platforms, particularly B2C marketplaces, have seen rapid developments over the years thanks to the boom **e-commerce** market in Asia. Increasing numbers of traditional retailers have set up online stores, while major e-commerce players have expanded their online marketplaces in both their own country or across Asia, hoping to reach out to more customers in Asia (example: IKEA expanding online in Japan). With m-commerce getting more popular among online shoppers in Asia, many retailers have launched mobile-enabled websites and mobile apps with location-based and other interactive functions. Meanwhile, the move towards a cashless society is gaining steam. Some retailers have partnered with payment service providers to offer electronic payment services and mobile wallets with an aim to provide online customers a frictionless payment experience.

Example: to illustrate these trends is @Cosme in Taiwan, an online beauty store owned by Japan's e-commerce company Istyle, opened a brick-and-mortar store in Taiwan in May 2017. The move is part of Istyle's business expansion plan in Asia. The company opened more new stores in Taiwan and Hong Kong in 2017. Currently, Istyle's overseas businesses have been centered on wholesaling cosmetics and CBEC businesses in China.

- **Social media**

Social media increasingly become a key marketing and selling tool driven by accelerated smartphone penetration and increased amount of time consumers spent online, the number of social media users has increased drastically in Asia. According to Go-Globe, the **Asia-Pacific region accounts for over 52% of the world's social media users**; and over 97% of active social media users access their social media accounts on mobile devices. In recent years, social networks have become a key marketing tool. Many social media platforms have added new functionalities such as live-streaming to better engage with customers and drive revenue. Social media becomes a key marketing tool, helps drive streaming and

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[8] 9 Key Trends and Developments, Fung Business Inteligence, March 2017

sharing services. In Taiwan Facebook is very popular, the main communication platform is Line, in China the WeChat and Sina Weibo are used.

In Asia having around 175 million social media users, Southeast Asia has already overtaken the U.S. when it comes to the number of people on social media, in Taiwan 91% of social media user are on Facebook as well. The social media boom has underpinned the growth of social commerce (s-commerce) in the region, especially in Southeast Asia.

- **Seamless connection between online and offline (O2O)**

O2O (online to offline integration) has grown rapidly in Asia over the past few years. The rise of e-commerce has changed the way consumers shop, making O2O retailing a key tenet of traditional retailers' strategies. To adapt to consumers' increasingly complex shopping journey – **weaving across physical and digital channels**, retailers in Asia are striving to push forward seamless integrations of physical stores and online/mobile channels, along with offering new delivery options such as click-and-collect and 24/7 parcel lockers[9]. A recent O2O development in Asia is the rapid adoption of O2O in catering and lifestyle services industries. O2O food delivery, in particular, is growing rapid in many cities in Asia due to consumers' increasing desire for convenience.

Example: Kakao, a South Korean Internet company known for its chat app Kakao Talk, launched food-delivery service in January 2017. The new service is incorporated into Kakao Talk app.

- **Technology advancement**

Although e-commerce is gaining substantial momentum in Asia, brick-and-mortar stores still capture the majority of shopping time. Many traditional retailers have leveraged mobile Internet and digital technologies to better meet the needs of tech-savvy shoppers and satisfy forward-thinking digital-based demands. Digital technologies such as location-based services, interactive mirrors, Internet of Things (IoT), virtual reality (VR) and augmented reality (AR) can increase shoppers' convenience, gamify the retail environment, drive customer engagement and enhance customer satisfaction.

Example: Innisfree, a South Korean natural cosmetics brand under Amorepacific, has partnered with Bank of China and POPSPi, a Shanghai-based mobile retail solution company to roll out its mobile point of sale (POS) solution in its stores in China. Each of Innisfree salesperson is equipped with a mobile-based POS which can eliminate the need to line up for checkout and can respond promptly to customers' various requests on the go.

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[9] 9 Key Trends and Developments, Fung Business Inteligence, March 2017

- **Shifting from consumption to experience**

Nowadays, consumers in Asia are more sophisticated and increasingly looking for additional value – exceptional services and personalized experiences. The concept of "experiential shopping" has collected significant attention in Asia. Many department stores and shopping malls have incorporated more "experiential elements" such as food & beverages (F&B), kids'-related activities, art & culture and lifestyle elements to enlighten customers with shopping experience and services. Meanwhile, an increasing number of retailers in different segments have opened experiential stores or flagship stores that pay particular attention to service offerings and emotional engagement with customers.

Example: Tsutaya Bookstore to open first international store in Taiwan Japan's major lifestyle bookstore chain Tsutaya Bookstore has opened its first overseas store in Taipei, Taiwan. The new store, featuring lifestyle and experiential elements, is mainly comprised of two sections – bookshop and café. More than offering stationery items and reading materials on different topics, from art, language, fashion, architecture to lifestyle, culture, healthcare and food, the bookshop also sells home products, baby products and fashion items. In the café zone, customers can enjoy not only simple drinks and snacks, but classy Japanese-style meal sets and desserts.

- **Exploring new business models, reinventing business to capture opportunities**

To cater to increasingly segmented needs of consumers, many retailers in Asia are seeking ways to revamp their businesses and come up with innovative strategies. Small-sized retail formats such as convenience stores and pop-up stores have enjoyed stronger growth over recent years. They have the advantage over their competitors of having closer access to their target customers, and are also able to offer faster services, along with attractive product selections and added convenience, not to mention the lower operation costs of smaller-sized stores. In view of this, some big box retailers are moving to smaller formats by opening smaller-scale stores or downsizing their stores. Asia consumers, especially the millennials, now demand more personalized products and services. Some retailers and leading e-commerce players have adopted new business models such as made-to-order and direct-to-consumers to appeal to the needs and tastes of specific demographics.

Example: Lotte Department Store launches new compact mall "Lotte El Cube" In South Korea, Lotte Department store has also adopted the smaller-sized format concept and launched three new compact shopping malls "Lotte El Cube". Rather than offering something for everyone, the relatively small shopping malls focus specifically on young, fashion-conscious shoppers.

To distinguish themselves from competitors, a number of e-commerce players have come up with a more creative e-commerce model – proprietary merchandise approach.

Example: Furla to launch its first made-to-order service in Singapore. Italian handbag company Furla has recently launched its first made-to-order service "Made For You" at the Marina Bay Sands flagship store. Customers can design their own bags. For each customized bag, it will take between 8-12 weeks from order to delivery, depending on the material chosen and on market demand. Each bag will also come with a personalized hand-written certificate.

- **M&A: An opportune avenue fueling growth**

Merger and acquisition (M&A) remains an attractive route for retailers in Asia to garner market share and accelerate growth. Through acquiring and forming partnership with well-established brands, retailers could achieve greater economies of scale and adopt advanced technologies, brand-building know-how and strategic repositioning opportunities.

Example: Merger of FamilyMart and Uny forms Japan's second largest convenience store chain In September 2016, Japan's major convenience store operator FamilyMart merged with Uny, another local retailer which owns Circle K Sunkus convenience store chain in Japan. As most of the Circle K Sunkus stores owned by Uny were converted into to FamilyMart, the total number of FamilyMart stores now amount to some 17,000 in Japan, making it the second largest convenience store chain in the nation, just after the industry leader Seven-Eleven Japan of around 18,000 stores.

- **Duty-free business sees robust growth in Asia**

A surge in Chinese tourist arrivals has fuelled the growth of duty-free businesses in both airports and downtown areas across major destinations in Asia. For example, South Korea's duty-free market grew drastically by 33.5% yoy in 2016, racking up sales of 12,275.7 billion won (US$10.56billion)[10]. Lotte Duty Free, the largest duty-free operator in South Korea, registered sales of 5,972.8 billion won (US$5.13 billion) in 2016, followed by second-placed Shilla Duty Free, with sales reaching 3,405.3 billion won (US$2.93 billion) in 2016.

Asian countries remained the top picks for short trips and favored destinations among Chinese tourists. Among the top five overseas destinations for Chinese travellers, South Korea, considered as a trendsetter in fashion, beauty and entertainment, came first as the most popular destination for Chinese travelers , followed by Thailand with its exquisite beaches and temples, Japan with its interesting history and culture and Taiwan with its nature and famous street food. To cash in on the Chinese tourist boom, major duty-free players in the region have all speeded up their expansion in both airports and downtown areas.

Example: Incheon International Airport takes the lead in airport duty-free sales

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[10] Source: Korean Customs Service

South Korea's Incheon International Airport registered duty-free sales of 2,300 billion won (US$2 billion) in 2016, a leap of 14.7% yoy, making it the world's top duty free sales location, ahead of Dubai International Airport. The airport attributed its robust sales to increasing passenger traffic, presence of diverse global and local brands and upgraded shopping environment through renovation.

2.3. Comparison of Asian (APAC) and European Retail Economic Environment

- **Purchasing Power**

The key macroeconomic indicators of selected Asian economies how GDP changed in 2016 compared to previous year and how GDP per capita figures determine the retail consumption (Appendix 1). Retail market in APAC has been driven by increased purchasing power in strong economies, such as China, South Korea, Japan or Taiwan. The Asia Pacific region is anticipated to be at the forefront of global economic growth in the 21th century. Its main cities have historically been the principle drivers and areas for retail investment, however across certain countries, most evidently China, there is an increasing shift of activity towards smaller urban regions thanks to growing incomes and improving standards of living. In China the GDP per head was 8,313 US$ in 2016 (Table 2). Still, this is not a uniform trend as other markets in the territory are still more dependent on their main cities.

Table 2: APAC leader countries' data

	GDP growth in % in 2015	GDP growth in % in 2016	GDP growth in % in 2017	GDP per capita in USD in 2015	GDP per capita in USD in 2016	GDP per capita in USD in 2017	No. of households in 2017
Singapore	2,0	2,0	3,6	52 889	52961	57710	1 272 049
Hong Kong	2,4	1,9	3,8	42 423	43528	46110	2 368 362
Japan	0,5	1,0	1,7	32 477	38971	38440	53 403 226
South Korea	2,6	2,8	3,1	27 221	27539	29890	19 837 665
Taiwan	0,7	1,4	1,1	22 294	22453	24580	8 561 383
China	6,9	6,7	6,9	7 925	8113	8640	448 940 838

Source: GFK

Despite the Brexit negotiations, the European economy experienced an upturn, which was due in part to moderate increases in private consumption. In 2017, each citizen of the EU-28 countries had an average purchasing power of €16,436[11]. This equates to a nominal increase of 1.9% compared to the previous year. Among the EU countries, only Great Britain (-1.5%) underwent a purchasing power decline, which is partly a result of the devaluation of the British pound. Great Britain aside, the momentum from previous years continued, resulting in above-average growth rates, particularly for central and eastern European countries. Romania (+7.8%) had the greatest gain in purchasing power. But this country's low per-capita purchasing power (€4,556) demonstrates the persisting immense gap in wealth levels across Europe. The highest values of GDP per capita are listed in Table 3.

Table 3: European leader countries' data

	GDP growth in % in 2015	GDP growth in % in 2016	GDP growth in % in 2017	GDP per capita in USD in 2015	GDP per capita in USD in 2016	GDP per capita in USD in 2017	No. of households in 2017
Denmark	1,2	1,1	2,1	52 002	53 744	56 440	2 670 059
Sweden	4,1	3,3	2,4	50 272	51 165	53 220	4 536 214
Netherlands	2,0	2,1	3,1	44 433	45 283	48 350	7 720 787
Austria	0,9	1,5	2,9	43 439	44 498	47 290	3 870 408
Finland	0,5	1,4	3,0	41 921	43 169	46 020	2 654 657
Germany	1,7	1,8	2,5	41 219	41 902	44 550	40 628 737
Belgium	1,4	1,2	1,7	40 231	41 283	43 580	4 871 266
France	1,2	1,2	1,8	36 248	38 128	39 870	28 044 358
United Kingdom	2,3	1,8	1,8	43 734	40 096	39 730	27 458 679

Source: GFK

Except Japan and Taiwan on other the Asian GDP growth rates exceed the 3 %, in Europe in the majority of country the growing rates are below 3%. The relative differences of GDP per head figures are reflected in purchasing power data as well. Purchasing power corresponds to the population's disposable net income, including government subsidies such as pension payments, unemployment assistance and child benefit. The households use its purchasing power to cover expenses related to

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[11] EUROPEAN RETAIL IN 2018, GFK

food, accommodation, services, vacations, insurance, private pension plans and retail purchases. Some low per-capita purchasing power figures demonstrate the persisting immense gap in wealth levels across both Asia and Europe. For example, with €12,473 per person, Poland's capital city of Warsaw has a higher purchasing power than Spain's Andalusian region (€10,985). This is the case even though Spain's average per-capita purchasing power is more than twice as high as Poland's. In terms of data 2015 Hong Kong's purchasing power higher fifteen times (sic), than Vietnam's one.

Driven by domestic components across Europe's countries, the economic upturn resulted in multiple upward revisions of the prognoses by economic research institutes. Increases in consumer expenditures are also anticipated for all European countries in 2018. The past year's growth in demand was able to compensate for stationary, tarditioanl retail's market share losses due to online trade. Is is expected a nominal turnover growth of +2.1% in the 28 EU countries for 2018. But this is just slightly below the forecasted inflation rate increase, meaning that only modest real-term growth is anticipated for retail turnover in Europe.

- **Consumer Confidence**

The Consumer Confidence Index measures perceptions of local job prospects, personal finances and immediate-spending intentions. Consumer confidence levels above and below a baseline of 100 indicate degrees of optimism and pessimism, respectively. In this survey the used index and other findings related to consumer confidence are based on data from the Nielsen Global Survey of Consumer Confidence and Spending Intentions.

Europe posted a consumer confidence increase of five points in the second quarter, reaching an index score of 85[12]. The job outlook surged six percentage points to 37%, personal financial sentiment rose three percentage points to 45%, and immediate spending intentions increased two percentage points to 36%. Terrorism continued to be a leading concern for Europeans.

Confidence in the Asia-Pacific region strengthened modestly, rising three points to 114 in q2 2017. **Sixty-seven percent of respondents in the region said they expected their personal finances to be good or excellent in the coming year, up three percentage points from the fourth quarter of 2016.** Nearly as many (64%) expressed optimism about job prospects in the year ahead, an increase of one percentage point from the fourth quarter of 2016. More than half of regional respondents (52%) said it is a good or excellent time to buy the things they want and need, which represents no change from the fourth quarter of 2016. In the Asia-Pacific region, concerns about the economy decreased five percentage points to 27% in the second quarter of 2017. The share of respondents expressing fears

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[12] The Nielsen Company, 2017, Consumer Confidence Concerns And Spending Intentions Around The World

about job security also declined three percentage points to 20%. Concern increased around health (27%, up two percentage points), work / life balance (26%, up three percentage points), parents' welfare and happiness (16%, up one percentage point), and children's education and welfare (13%, up one percentage point). India held the second highest index in **Asia Pacific remaining one of the most optimistic markets in the region and globally**. Meanwhile, among the region's developed economies, confidence increased significantly in South Korea (63, up 20 points) and Japan (87, up 13 points). In Hong Kong (102), Taiwan (79) and Singapore (89), confidence increased by nine, six and four points, respectively.

Summing up: In Asian countries – such as on the most European regions - the traditional retail has acquired a new function to rise of omni-channel strategies: Attractive retail spaces are important no longer just for their ability to generate store turnover, but also for their role as promotional vehicles for the associated online store as we have seen in this chapter 2.2. Direct store-to-web turnover is just one aspect of this phenomenon in both regions. The illustrations show that a traditional retail presence boosts brand awareness among customers, which can lead to above-average online turnover in the catchment areas of the retail sites. Retailers can take into account future expected parameters when evaluating the turnover potential of retail spaces. As in the case of increasing GDP per-capita, sales provision varies between the two continents. In majority of Asian countries the growing rates of national output indicators exceed the figures of European average one. In both continents restrictive the protectionist tendencies can be slowed the expansion of international retailers. Dynamic growth in sales area productivity also counterbalanced to some degree rising rental costs in tight commercial real estate markets in Asian countries. Rising turnover accompanied by a simultaneous decline in retail space increased sales area productivity.

3. Analysis of the Taiwanese Retail

In this chapter described the macroeconomic background of Taiwanese retail sector, what are the resources economic growth, how economy environment is heavily influences the consumption, what the share of retail spending, how the retail structure changed in the past years.

Taiwan's economy benefited from a favourable macroeconomic context. This could be partly explained by a regional financial market stabilizing after the volatility of late 2016, although the recent escalation of tensions in the Korean peninsula has again raised uncertainty. Taiwanese global competitiveness

ranked by 15th position in 2017-2018 (14th in 2016-2017).[13] The compounded average growth rate of GDP is 3,18% in the past ten years, one of the main pillar of the national competitiveness is the macroeconomic stability, the unemployment rate is low, in 2017 it was 3,6% (Figure 1).

Figure 1: Economic situation

Source: GFK Nurnberg

Taiwanese exports are rebounding at a healthy pace, setting the stage for stronger economic growth. In recent years, exports to China and the rest of Asia have risen strongly, and those to the United States have also grown at a strong pace, albeit from a smaller base. The Chinese story is the most important. China is Taiwan's principal trading partner. Indeed, Taiwanese exports to China and Hong Kong combined account for close to 40% percent of the total. The stabilization of China's economy and the improvement in the state of its manufacturing industry has evidently helped boost Taiwan's exports. Taiwan's fortunes are, to some extent, tied to the trends of the consumer electronics industry, and there is considerable talk about how to diversify the economy so that it becomes less vulnerable to the vicissitudes of the electronics market. The net export exceeds the 10% of yearly GDP since 2014, in 2016 this figures are 12.2% in Taiwan (Table 4) and 9.4% was in 2016 in Hungary.

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[13] World Economic ForumF: The Global Competitiveness Report 2017–2018.

Table 4: Share of expenditures on Gross Domestic Product

Period	GDP	Domestic Demand				Demand of Rest of The World
		Private Final Consumption	Government Final Consumption	Gross Fixed Capital Formation	Changes in Inventories	Net Export Subtotal
2014	100%	53%	15%	22%	0%	10%
2015	100%	52%	14%	21%	0%	13%
2016	100%	53%	14%	21%	0%	12%
2017(p)	100%	53%	14%	21%	0%	13%

Source: own edition

It is worth examining more detailed level what happened in 2016. Taiwan's GDP growth reached 1.5% in 2016, increasing from 0.72% last year due to the improving figures in private consumption, investment and exports. The economic recovery has had a positive effect on the retail sector. Retail sales registered an historical high of NT$4.1 trillion in 2016, increasing by 1.9% year-on-year YoY), with the main contributors being supermarkets (9.3% YoY), auto sales (5.4% YoY) and convenience stores (4.7% YoY).[14] Retail sales in Taiwan totaled NT$4.15 trillion (US$143 billion) in 2017, up 1.2 percent from 2016, when the previous high of NT$4.10 trillion was set, MOEA data showed.
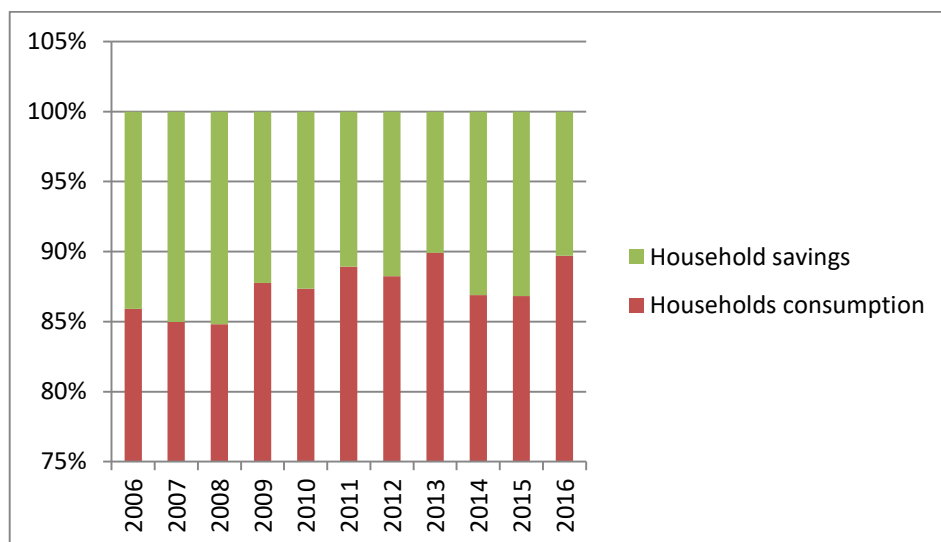
3.1. Consumption

Although consumer spending value in Taiwan has been growing modestly, a trend that is likely to continue in the coming years, the portion the households' consumption are stagnated for several years. Spending is being driven by rising employment, itself the result of improved exports. In addition, a strong equity market is boosting consumer wealth. Also, the Taiwanese labor market is relatively tight, and productivity has been rising, thus setting the stage for wage gains that could have a positive impact on consumer spending. On the other hand, wages in Taiwan have been remarkably resistant to

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[14] Savills World Research, Taiwan, 1H 2017.

improvement, unlike in neighboring South Korea. Thus, it remains uncertain whether an improvement in the export environment will actually generate significant wage gains.

Figure 2: Share of Households Consumption and Savings

Source: own edition

In the past ten years the share of consumption fluctuated between 85-90% out of household income (Figure 2). It is assumed that the level of consumption depends directly on the level of disposable income (Appendix 2). The higher the disposable income, the greater the consumption, so the main question is how strong the relationship between consumption and disposable income: called the consumption function.

The main research topics in this part are how households decide about spending income, how much of their income to consume, how their income correlate with consumption. This is a typical microeconomic question, but its answer has macroeconomic consequences from the research aspect. In this chapter it is analysed how the Taiwanese households' consumption decisions influenced by income and how affect the national GDP. It is figured out the marginal propensity to consume, which is the portion of spent money out of an additional dollar of income in terms of the statistical data (Appendix 3). The relevance of the country specific marginal propensity to consume is the power and ability of fiscal policy to influence the economy stems from the feedback between income and consumption.

Based on statistical data components of consumption function, shown in next equation:

$$C = C' + cY$$

C is consumption, Y is disposable income, C' is a constant, and c is the marginal propensity to consume.

Figure 3: Linkage of income consumption (date in Billion NT$)
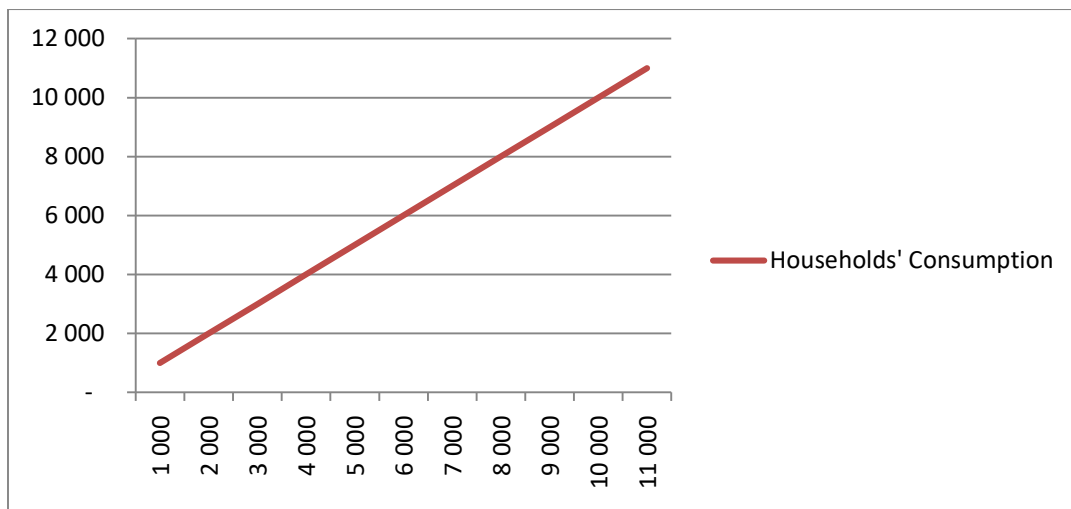
Source: own edition

The equation in numbers means, that c = 0,95 and C' = -719 030. The autonomous yearly consumption, - which is not driven directly by income - represented by negative figure meaning very strong correlation between income and consumption. One dollar additional income results 0,95 dollar plus consumption, this denotes the average propensity to consumption as well.

It is worth comparing to other country figures. For example in Hungary the values of the C= C'+cY regression equation are the following: C' = 69.064,00, and c= 0,74. Value "a" indicates where the point of intersection of axis Y is, that is, how the theoretical value of consumption would develop if income was 0. This value is similar to the term autonomous consumption, which was previously marked by c0. Value "b" that is, c1 was examined when determining marginal propensity to consume. This signifies the rise of the regression line, that is, in the case of a one-unit change (e.g. HUF1) in income, the value of the consumption category increases by 0.74 (.74 HUF)[15]. One of the potential explanations could be the altered savings rate. In long term saving rate, which is the linkage between of the income and save similar in the two countries, for example in period 2003-1016 13% and 11% in Taiwan and Hungary respectively.

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[15] Kozák, T.: The Role of Consumption in the Hungarian Economy.: Determining Marginal Propensity to Consume and the Multiplier Effect on the Basis of Domestic Statistical Data

3.2.   Retail spending within consumption

Knowing the consumption function it us worth examining the sensitivity of the equilibrium of Supply and Demand for the Economy's Output in Taiwan. The Gross Domestic Product by Kind of Activity includes the retail figures (Appendix 4) to analyse the sector's share in economy in terms of value added performance. In Taiwan such in other developed counties the service sector dominates, 65% of GDP (Figure 4) stems from services, of which 27% comes from ICT Industry (ten years ago this figure was only 22%).

Figure 4: Gross Domestic Product by Share of Activity
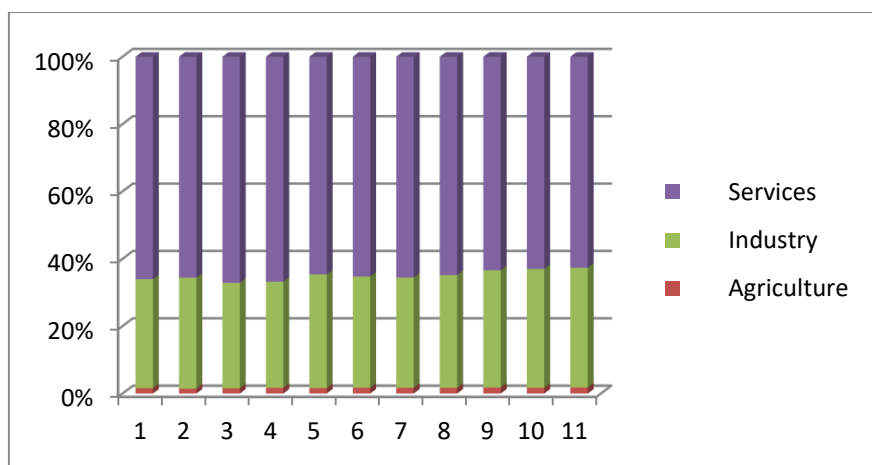
Source: own edition

In Taiwan the share of wholesale and retail sector in recent years: 16% out of GDP, (in Hungary the same figures are 10-11%), so the examined sector plays relative important role in the economy. Within the 16% retail represents 6% value added contribution to GDP in 2016: 1,103,956 Million NT$. Despite of increasing role of service sector the retail value added expenditures to GDP remained in 16-17% belt in the past ten years. The main reason of this stagnating share out of Gross Domestic Product is the growing competition in the sector.

In the next part in terms of the presented figures the sensitivity of relationship between GDP and retail is figured out, what happen, if disposable income is growing resulting additional consumption, which causes more spending in retail.

The following equations denote the linkage of the demand for goods and services in analysis of equilibrium:

$$Y = C + I + G$$

As the consumption function relates consumption (C) to disposable income (total income deducted by tax and social contribution), it is analysed how the total GDP expenditure change when the consumption increases due to disposable income rising. In the table 5 the demand for the Taiwanese economy's output comes from year 2016 consumption, investment, and government purchases, where the basic figures come from National Statistics[16].

Table 5: The effect of the consumption function on aggregate output (data in Billion NT$)

Basic Version		0,95	Planned			Planned
Output	Disposable	Consumption	Investment	Government		Aggregate
(Income)	Income	Domestic	Spending	Purchases	Net export	Expenditure
Y	Yd ≡Y - T	C	I	G	I	C + I + G+I
17 152	10 067	9 032	3 570	2 466	2 085	17 152
18 867	11 074	9 856	3 570	2 466	2 085	17 977
20 754	12 181	11 633	3 570	2 466	2 085	19 753
22 829	13 400	12 796	3 570	2 466	2 085	20 917
25 112	14 740	14 076	3 570	2 466	2 085	22 196
27 624	16 214	14 764	3 570	2 466	2 085	22 885

Source: own edition

In this model the consumption depends on disposable income; and investment does not depend on the real interest rate; and also government purchases and tax level are fixed. To this can be learned the GDP expenditure sensitivity about the supply of goods and services consumption. As 46% of consumption expenditure spent in retail, it can be calculated how income growing result increased retail sales. In Taiwan 1 % additional income results 1.04% more retail sales.

It is assumed the rising income effects the consumption, which influence the level of production and the production function determine the payable income for economical actors, - causing additional demand to the economy. **In terms of the analysis it could be stated, that 1,000,000 million NT$**

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[16] Available form [online]: https://eng.stat.gov.tw/ct.asp?xItem=37408&CtNode=5347&mp=5

increase of households' income causes 249,426 million NT$ plus sales in retail, so - ceteris paribus - the GDP growing by 67,212 million NT$. This detailed relationship is called as multiplier effect described in chapter 3.4.

3.3. The multiplier effect of retail

In the previous model GDP computed on way of the expenditure approach to calculating the total spending of GDP. The other way is to add up the income - wages, rents, interest, and profits - received by all factors of production in producing final goods and services by different sectors.[17] These two methods must lead to the same value as every payment (expenditure) by a buyer is at the same time a receipt (income) for the seller. It is used the income approach to calculating the share of retail sector in GDP and examine the relationships to other sectors. The Statistical Bureau Taiwan compiles the benchmark IO tables are produced according to result of the Industry, Commerce and Service Census Survey every 5 years. but regularly disseminate the Input-Output Tables (the matrixes) which represent interrelationships between each industry. These tables include various kinds of transactions tables, input coefficient tables, and impact coefficient tables, of which are described in the survey two ones:

3.3.1. Transaction Table

Transactions Table, or named use table, is the basic table of Input-Output statistics. Each row represents the destination, for intermediate consumption or final use, of commodities for example sold by retail companies. Each column details the production function of a specific commodity or service activities acted for example by retailers, including the value of the commodity's total output, the mix of commodities it consumes to produce this output and the value added by labor and capital producing this output. The final use columns detail the commodity composition of the final use components of GDP. Appendix 6 includes the original relationship between the components of total gross output, and the value added domestic product (GDP) as well. As shown in the summarised table, inputs are consumed by producing and service providers sectors—these are the intermediate inputs, such as raw materials or semi finished inventories—and by final use. Value added is equal to the net income earned in production—this includes labour earnings so the resource to pay for income owners, which stems from the difference of totals sales and input purchases, so the total gross output is equal to the sum of intermediate inputs and value added value added summed across all industries is equal

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[17] Karl E. Case, Principles et al. of Economics, Prentice Hall, p. 425.

to regional GDP. Out of 21.0 Trillion NT$ total intermediate demand the retail sector represents 4,1 Trillion NT$ input goods and services purchase (Table 6).

Table 6: Retail in Transactions Table at Producers' Prices unit: million NT$

	Wholesale and Retail Trade	Intermediate Demand
Intermediate Inputs	1 223 492	21 035 327
Compensation	1 589 996	7 295 871
Operating Surplus	1 116 025	3 824 430
Consumption of Fixed Capital	154 450	2 409 901
Taxes on Production and Imports Less: Subsidies	54 052	404 269
Net Commodity Taxes	-	132 194
Net Import Duties	-	-
Value Added Taxes	-	56 061
Other Taxes, Less Subsidies	54 052	216 014
Primary Inputs	2 914 523	13 934 471
Adjustment Item	-	6 885
Total Inputs	4 138 015	34 976 683

Source: own edition

Value added is defined as the value of gross output minus intermediate inputs excluding any income accumulations among companies. The **added value is the source of the payments made for economic actors,** namely for example the rewarding of employees in form of wages or salaries and the taxes on production and imports. So the transaction table shows the economic actors' contributions for the national gross domestic product through household consumption, (local) government expenditures, net export figures, company investments, capital expenditures and import value[18]. (In the statistical data wholesales figures are integrated to retail figures, nevertheless on the in the national level model the value chain accumulation is avoided)

Noteworthy the high portion of the primary input out of the total input, which sign relevant value added sharing in retail (70%), this is the source of income payment for business actors, such as

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[18] Moss D. (2007): Macroeconomics, Harvard Business School Press, p.11.

employees. The compensation level represents 30% in Taiwan. In Hungary the share of value added disbursement in retail is 65%[19], the employees' compensation is on Taiwanese level, the taxes dominate more in Hungarian commerce, the VAT in Taiwan 5 %, in Hungary the main tax key: 27%.

On the national level the gross output is equal to the sum of the intermediate inputs and value added, which can be measured as the sum of the intermediate inputs and final use. As the total demand equals with the total supply, - considering the operational surplus – the retail sector performance is the same, than the input buying in the input – output model. In the survey the benchmark input-output tables are compiled for year 2016.

3.3.2.   Impact Effects Coefficients

Input coefficients are obtained by dividing input with output in terms of Input Coefficients Table of Domestic Goods and Services (D)[20]. Input coefficient in case of retail and wholesale sector denotes the input required under existing selling technologies. It represents a certain production technological standard and is called technology coefficient, so the input goods purchasing represents 25% of the total expenditures in retail sector.

 The Impact coefficients are also named Inverse Matrix Coefficients, or Interdependence Coefficients or Impact Effects Coefficients. "Coefficient" means the numbers of units that have to be bought, - either directly or indirectly -, from various sectors for every additional unit needed of a given sectoral output. What is eventually needed to influence, either directly or indirectly, output, added value and input through industry linkage is called "Feedback Effects of the Final Demand." It is used for evaluation the retail multiplier effect, calculated the domestic inverse matrix results the feedback effects on the final demand21. The Impact coefficients are also named Inverse Matrix Coefficients, Interdependence Coefficients or Impact Effects Coefficients. In case of retail it means the numbers of unit or value that are received, directly or indirectly, from each industry to deliver one unit of retail sector to final users, and also expresses the degree of interdependence between different industries, The value of the coefficients of wholesale and retail trade is 1,032370, so for example 1 million NT$ additional trade purchase increase the total intermediate input producing by close to 3%. In other words any 1 million NT$ local additional buying goods and services by retailers, leads to a plus 376 thousand NT$ direct effect in Taiwan spent by those companies who producing the inputs for retailers.

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[19] Available form [online]: http://www.ksh.hu/nemzeti_szamlak_gdp
[20] Available form [online]: https://eng.stat.gov.tw/ct.asp?xItem=36703&ctNode=1650
[21] Available form [online]: https://eng.stat.gov.tw/np.asp?ctNode=1555

4. Summary

Asia-Pacific continues to be heralded as a region of opportunity and growth. And across the majority of markets, local economies fared well in 2017 compared with 2016. Generally, consumers across the region appeared more confident throughout 2017 than they were in 2016, buoyed predominantly by increasing optimism in job prospects and the state of their personal finances. But while the economic environment might seem favourable, the majority of consumers across almost all markets are trying to curb their spending habits to save on expenses. Saving on groceries is also top of mind for one in five (22%) consumers in Asia-Pacific. This feeling remains, as savings continues to be a top priority for people after they have covered their essential living expenses. The FMCG industry is feeling the effect of this cautiousness, with offline growth being a mixed bag across the region. While e-commerce is often touted as a major disruptor, stealing consumers dollars from brick-and mortar stores, the story in Asia-Pacific isn't that simple. E-commerce is and will continue to affect our retail landscape, but it's not an immediate game-changer for all markets. Conditions need to be right for e-commerce to thrive. Variables will differ by market, and no single market will achieve a perfect score across all measures. So it's critical to have the right foundations and market dynamics at play for e-commerce to grow and prosper. A number of these variables are cultural, systematic and infrastructure changes that need to occur. And that means that offline retail will not disappear anytime soon. So while e-commerce is a "must have" for horizon planning in the short, medium and long term, it's important not to get too caught up in the hype and buzz of the press and lose focus on where the majority of your business rests today. Remembering this varies by market and category.

Figure 6: The role of retail spending in Taiwan
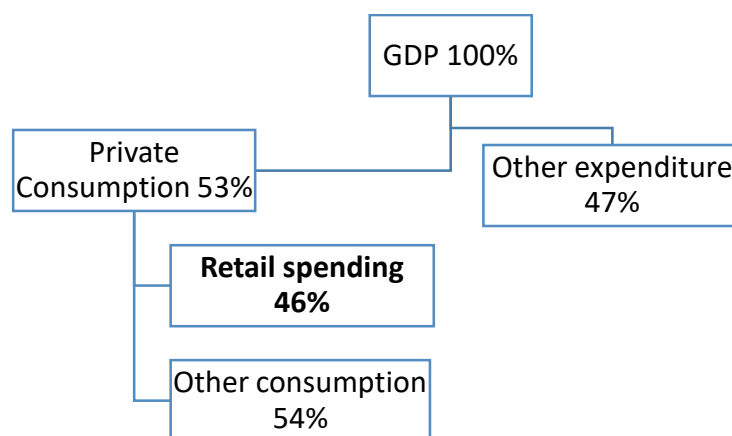
Source: own edition

The share of private consumption in Taiwan exceeds the 50% (Figure 6), in Hungary the same figure is 49%, so in both countries the consumption is one if the main drivers of the growth. From the sectors' activities point of you it can be explored the commerce (including retail and wholes) added value contribute to GDP by 16%, in Hungary the same one is 10%, so the this difference is significant between the two countries. On one side the explanation could be higher standard of living, which reflected in GDP per capita, Taiwanese data is higher by 1,5 times, than Hungarian figure. On the other side the more services allows higher margin on company level, so the added value can be higher for Taiwanese entrepreneurs. The Retail Sale in General Merchandise Stores represents 41% out of total selling, and increasing portion if online sales, so the strengthening omni-channel model helps to achieve higher profitability for Taiwanese retailer.

Appendix

Appendix 1: Key macroeconomic indicators of selected economies in Asia, 2016

	Population (million)	GDP (US$ billion; at market exchange rate)	GDP per head (US$; at market exchange rate)	Real GDP growth (% change)	Consumer price inflation (avg; %)
China	1,366.0	11,357.0	8,313	6.7	2.1
Japan	126.3	4,941.0	39,110	1.0	-0.1
South Korea	50.5	1,402.5	27,770	2.7	1.0
Taiwan	23.5	529.3	22,487	1.5	1.4
Singapore	5.6	297.0	52,961	2.0	-0.5
Malaysia	30.8	295.1	9,598	4.3	2.1
Thailand	68.1	405.2	5,946	3.2	0.2

Source: Euromonitor International; compiled by Fung Business Intelligence

Appendix 2: Taiwanese expenditures on Gross Domestic Product at Current Prices Unit: Million NT

| Period | GDP | Domestic Demand | | | | Demand of Rest of The World |
		Private Final Consumption	Government Final Consumption	Gross Fixed Capital Formation	Changes in Inventories	Net Export Subtotal
2006	12 640 803	6 947 802	1 854 009	3 063 352	47 643	727 997
2007	13 407 062	7 197 916	1 922 075	3 205 121	16 361	1 065 589
2008	13 150 950	7 260 169	1 991 181	3 045 433	171 594	682 573
2009	12 961 656	7 175 511	2 055 721	2 761 737	-181 488	1 150 175
2010	14 119 213	7 497 682	2 098 717	3 335 881	188 764	998 169
2011	14 312 200	7 798 976	2 167 595	3 346 945	35 921	962 763
2012	14 686 917	8 035 105	2 254 282	3 282 131	22 029	1 093 370
2013	15 230 739	8 248 385	2 242 637	3 378 731	-18 535	1 379 521
2014	16 111 867	8 588 741	2 342 754	3 493 834	27 323	1 659 215
2015	16 770 671	8 755 829	2 346 110	3 493 267	19 845	2 155 620
2016	17 152 093	9 031 513	2 465 870	3 584 910	-15 206	2 085 006
2017	17 444 666	9 246 526	2 456 036	3 580 972	-46 213	2 207 345

Appendix 3: National Disposable Income, Consumption and Savings, At current prices, Unit: Million NT$

Year	National Disposable Income Households	National Consumption Households	Net National Savings Households
2006	8 087 876	6 947 802	1 140 074
2007	8 469 505	7 197 916	1 271 589
2008	8 560 131	7 260 169	1 299 962
2009	8 176 998	7 175 511	1 001 487
2010	8 583 814	7 497 682	1 086 132
2011	8 769 454	7 798 976	970 478
2012	9 104 584	8 035 105	1 069 479
2013	9 174 381	8 248 385	925 996
2014	9 884 804	8 588 741	1 296 063
2015	10 084 659	8 755 829	1 328 830
2016	10 067 332	9 031 513	1 035 819

Appendix 4: Gross Domestic Product by Kind of Activity（At Current Prices）

Year	GDP	Agriculture	Industry	Wholesale and
			of which	Retail Trade
2006	12 640 803	197 606	4 092 655	2 195 126
2007	13 407 062	191 886	4 362 723	2 309 925
2008	13 150 950	201 656	4 073 510	2 319 485
2009	12 961 656	215 109	4 034 619	2 223 440
2010	14 119 213	224 828	4 754 052	2 367 946
2011	14 312 200	245 783	4 725 408	2 443 613
2012	14 686 917	242 400	4 756 737	2 451 902
2013	15 230 739	255 728	5 074 385	2 574 104
2014	16 111 867	289 642	5 606 981	2 644 209
2015	16 770 671	282 034	5 894 602	2 729 062
2016	17 152 093	307 133	6 086 185	2 754 591
2017 (r)	17 431 157	300 401	6 168 823	2 828 220

Appendix 5: Retail Sales

Sales Value (NT$ 1,000)

Item	Retail Trade	Retail Sale in General Merchandise Stores	Retail Sale of other products in Specialized Stores	Other Nonstore Retailers
Year	Total	Subtotal	Subtotal	Subtotal
2006	3 147 067 009	783 045 058	2 255 365 919	108 656 032
2007	3 257 553 978	816 727 437	2 319 690 601	121 135 940
2008	3 219 479 279	835 016 138	2 247 250 820	137 212 321
2009	3 268 147 120	853 228 184	2 264 554 067	150 364 869
2010	3 474 522 182	913 041 846	2 398 352 602	163 127 734
2011	3 693 945 751	973 501 622	2 548 494 994	171 949 135
2012	3 783 151 632	1 022 723 882	2 582 404 870	178 022 880
2013	3 857 375 960	1 052 399 313	2 614 217 651	190 758 996
2014	4 007 434 127	1 106 506 429	2 695 161 500	205 766 198
2015	4 020 340 409	1 150 969 874	2 652 651 077	216 719 458
2016	4 096 825 430	1 204 677 237	2 664 286 617	227 861 576
2017	4 145 133 333	1 229 508 934	2 676 898 708	238 725 691