DETERMINANTS OF HOUSEHOLD FINAL CONSUMPTION EXPENDITURES IN ASIAN COUNTRIES: A PANEL MODEL, 1991-2015

Ekaterina ARAPOVA[*]

Abstract. The research aims at revealing determinants of the household private consumption expenditures, conducting comprehensive analysis of key factors, influencing consumer potential in Asian countries. The study compares "consumer pattern" in Asia with that for a larger number of countries, identifies differences in the influence of the same factors on Asian and global household private consumption expenditures. Such an approach aims to promote better understanding of potential success of structural measures, and to assess consumer potential in every particular country. In the current study Asian region includes 3 countries of East Asia - China, Republic of Korea and Japan, 9 ASEAN members – Brunei Darussalam, Malaysia, Indonesia, Singapore, Philippines, Thailand, Vietnam, Cambodia and Laos (Myanmar was excluded because of data constrains) and India. The methodology bases on combination of qualitative analysis of macroprudential reforms, aimed at stimulating household consumption expenditures and contemporary social and demographic trends in the East Asian countries with the regression model, which was applied to a panel data spanning the period 1991-2015. The scientific novelty and fundamental character of the research can be found, firstly, in the methodological approach, which bases on the comparative analysis of the determinants of final consumption expenditures and their influence on a group of Asian countries and in an group of countries, representing different regions. Secondly, the author focuses on contemporary (relatively less studies) trends of economic policies in Asian countries on the way of their transformation from export-led to consumption-led economic growth model. Thirdly, the research attempts to put together different factors, influencing household final consumption expenditures from the demand side: macroprudential reforms, social and demographic factors.

Keywords: Household Consumption, Asian Countries, Macroprudential reforms, panel data model
JEL codes: C23, E2, O53

1. Introduction

Sharp drop of foreign demand (mainly, in developed countries) during the Global Financial Crisis led to strong decrease in export revenues received by most of East Asian countries, lowering pace of their economic growth. At the same time, structural imbalances resulted in lower inflation levels in most countries of the region and reinforced deflation pressure.

Today most of Asian countries change their economic growth strategies towards diversification of economic growth sources. They move from outward-looking, export-oriented development strategies towards higher domestic demand, stimulation of national consumption and implementation of consumer potential, as private

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consumption is expected to be "much more pronounced in driving economic growth than exports" (ESCAP, 2016).

The special applicability of the research is in exhaustion of export-oriented model, the need to find new drivers of regional growth and implementation of consumption-led policies at national levels.

There is a set of factors that may determine the countries' shift towards consumption-led growth:

- Intensity of fiscal and monetary reforms and their ability to influence household final consumption expenditures (HFCE);
- Trends in the middle class growth and social structure of the population;
- Demographic and labor-market situation.

The research aims at revealing determinants of the household private consumption expenditures, conducting comprehensive analysis of key factors, influencing consumer potential in Asian countries[1]. The study compares "consumer pattern" in Asia with that for a larger number of countries, identifies differences in the influence of the same factors on Asian and global household private consumption expenditures. Such an approach aims to promote better understanding of potential success of structural measures, and to assess consumer potential in every particular country.

The main purposes of the research are:

- To present macroeconomic outlook of Asian countries in recent years, reveal key trends in the countries' monetary and fiscal policies in the framework of consumption-led growth,
- To analyze social and demographic trends, which determine household final consumption expenditures in Asian countries,
- To measure quantitatively significance of key determinants of final consumption expenditures for 110 countries from different regions and 13 Asian countries, to compare influence of the same determinants on Asian and global final consumption expenditures.
- To make conclusions about the "consumer pattern" of Asian countries and their consumer potential, taking into account all the influencing factors, including trends in the middle class growth, social structure of the population, demographic and labor-market situation.

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Many of contemporary international studies stem from quantitative ex-post analysis of various factors, influencing final consumption expenditure in different Asian countries. Nevertheless the number of papers, aiming at comprehensive analysis of social, economic and demographic factors, influencing final household expenditures from the demand side (in accordance with the movement towards consumption-led growth model and new trends in macroprudential policies) is limited. Besides, there are no studies, which attempt to distinguish peculiarities in the influence of a set of determinants on final consumption expenditures in Asian countries.

The research is organized as follows: section 2 provides a literature review, covering empirical analysis of various determinants of household final consumption expenditures on Asian countries. Section 3 is devoted to methodological and data issues, underlying the research. Section 4 gives an analysis of contemporary social and demographic trends, provides policy outlook in East Asia, and explores key consumption-stimulating policies in the Asian countries. Section 5 provides the empirical framework, discusses the results of the quantitative analysis of determinants. Section 6 makes conclusions, concerning the features of the Asian consumer pattern and the future of consumption-led growth strategy, and gives some policy recommendations, based on the results of calculations.

2. Literature Review

The determinants of consumption expenditures have become objects in a wide set of economic literature since Keynes (1936), Duesenberry (1949) Friedman (1957) etc. The factors, influencing consumption from both demand and supply side, such as income, wealth (measured in different ways), interest rate (credit and deposit), capital gain, liquid assets etc. have been studied both quantitatively and qualitatively.

Keynes (1936) laid the foundation of modern consumption theories. He stressed that “the level of income determines the consumption of an individual and the society” and introduced the theory of absolute income. His fundamental assumption about the independence of individual’s consumption was challenged by Duesenberry (1946), who wrote about interdependence of consumption patterns among individuals. The theory was developed by Modigliani and Ando (1957) with the Life Cycle Hypothesis and Friedman (1957), who proposed the permanent income hypothesis and stressed that consumption is influenced by “long term expected income rather than current level of income”. The implications of the permanent income hypothesis were explored by Hall (1978). Macklem (1994) proved that both current disposable income and expected future income are significant determinants of private consumption.

Thus, despite differences in the researchers’ approaches to income measurements and exploration of its influence on private consumption, it takes the central position among consumption determinants. Some of the researchers go ahead, measuring influence of some parameters, affecting households’ disposable income, on their consumption. For example, Poterba (1988) concentrated on announced income tax cuts, which affects individuals and households’ future expected income and thus may determine their consumption decisions. A huge number of studies explore influence of fiscal policies on domestic demand (Auerbach, and Gale, 2009; Spilimbergo et al., 2008; Baldacci et al., 2009; Feldstein, 2009).

Galí, López-Salido and Vallés (2004) explored the effects of government spending on consumption, following Blanchard and Perotti (2002) who also concluded that fiscal expansion leads to significant increases in consumption. Influence of tax, social security and welfare reforms on private consumption underlies the research by Bayar and Morrow (1999), who conclude that public policy may determine consumption and saving decisions.

Inflation is another factor, which may influence private consumption through its influence on real income. Both inflation and inflation expectations may predetermine consumption decisions and affect significantly private consumption in absolute terms and its commodity structure (D'Acunto et al., 2015; Doepke and Schneider, 2006; Mian et al., 2013; Taylor, 2013; Bloom, 2009; P ́astor and Veronesi, 2013). For example, D'Acunto, Hoang, and Michael Weber (2015) proved that households, expecting higher inflation are more likely to buy durables compared to households that expect constant or decreasing inflation.

Interest rates have been included into the long-run consumption functions in many studies (Davidson and Hendry, 1981; Sawyer, 1991). Although many studies concentrate on the influence on interest rates on private consumption, the results of empirical research are rather controversial. Keynes (1936) stated that interest rates have little influence on consumption decisions, while Blare (1978) proved that higher interest rates discourage consumption significantly, raising savings and vice versa. Taylor (1995) wrote about substantial interest rates effects on consumer spending, Hall (1988), Bernanke and Gertler (1995) found small effects of interest rates on national consumption.

Since late 1990s many international studies has dealt with exploring determinants of private consumption and influence of various economic reforms on household expenditures in East Asian countries in an attempt to search for balance between foreign trade and national consumption.

Zakaria (2007) and Ananchotikul and Seneviratne (2015) measured quantitatively domestic monetary policy transmission in a range of Asian countries and came to conclusion that monetary easing may have a limited influence on private household expenditures. The impacts of monetary policy on investment are relatively higher compared with its impacts on consumption. Tuuli Koivu (2010) explored influence of monetary policy on asset prices and household consumption in China and stressed a limited role of the monetary policy transmission mechanism (explaining this mainly with limited access of Chinese households to financial services).

On the contrary, fiscal policy may become relatively more effective for consumption stimulation.

Park (2010) examines the potential contribution of fiscal policy to rebalancing growth in China, Republic of Korea, the Philippines, and Singapore. He concludes that fiscal policy can be highly effective for consumption stimulation in four countries, but he stresses that "most appropriate and effective fiscal measures for rebalancing will vary widely across countries" and the governments must take into account peculiarities of every particular country's rebalancing process, while choosing the best instruments of fiscal policy.

At the same time, all the researchers stress that the effects of monetary and fiscal policies differ significantly across the countries. For example, in spite of its limited influence, changes in interest rates may have stronger effect on consumption in Thailand and the smallest in Indonesia (Zakaria, 2007), and influence of both fiscal and monetary instruments on private household expenditures in China is smaller compared with the other Asian countries (Keely and Anderson (2015). According to the researchers, the median length of transition period to consumption-led economic growth model is 19 years.

Evaluation of consumer potential of East Asian countries (both in South-East and North-East Asian) has been a rather popular topic in scientific literature in recent years, after the GFC 2008-2009. Many experts of international organisations and outstanding think tanks pay attention to rising population, middle class and purchasing power of Asian consumers that become especially important amid transformation of the countries' economic strategies, their movement towards diversification of economic growth sources and consumption-led growth.

Many experts raise a subject of "sustainable consumption", noting that "development has now become synonymous with increasing consumption". Consumer power is shifting to China and India due to the rise in the middle class purchasing power (Sustainable Consumption and Production in the Asia-Pacific Region).

SWITCH-Asia Network Facility experts wrote about the formation of a 'global consumer class', declaring that "the consumption patterns of millions of consumers in the newly industrialized countries of the Asia Pacific region are now converging with those of western industrialized countries – especially among the younger generations" (de Vera et al, 2016).

Thus, most of experts conclude that national demand must become a core element of future sustainable development in East Asia. They also identify in their studies number of factors that can significantly contribute to the countries' success on their way to consumption-led economic growth model. Nevertheless, the literature conducting complex analysis of different factors' influence on consumer spending in Asia is very limited.

Credit Suisse research (Asia: In Consumption We Trust?, 2016) is one of few studies, which explores five key factors driving relative consumption growth performance in 2016 – the economy's reliance on exports, support from fiscal and monetary policy stimulus, inflation, and the degree of household leverage. According to the estimations, the experts predict acceleration of private consumption in Indonesia, Vietnam and the Philippines in 2016. It is expected that Malaysia will not demonstrate high pace of private consumption growth because of limited space to pursue monetary policy stimulus, contractionary fiscal policy and has relatively high household debt. China will demonstrate moderate consumption growth. Consumer spending is vulnerable in Singapore because of elevated household debt and monetary tightening. Thailand has reasonable fiscal and monetary policy support of private household expenditures, but the macroprudential policies may bring significant results only in medium- and long run.

3. Theoretical Framework and Methodology

The research uses system approach, logic and comparative analysis, quantitative and qualitative analysis of statistical data. Key factors, influencing household expenditures are assessed qualitatively and quantitatively, and the conclusions base on the received evaluations.

Qualitative analysis includes (1) comprehensive exploration of contemporary trends in monetary and fiscal policies, (2) analysis of social and demographic trends in the Asian countries. Quantitative assessment of the HFCE determinants bases on the panel regression, commonly used in academic literature. Log-level of household final consumption expenditure capita in a country i at time t is a dependent variable.

The choice of influencing factors stems from the theoretical framework, taking into account contemporary trends in economic development macroeconomic policies in Asian countries. The research is conducted from the demand side, and aims at assessing influence of the parameters on household final consumption expenditure in short run. Although according to the theoretical framework there might be mutual dependence of the influencing factors, in short run the multicollinearity of regressors has been excluded (it has been proved empirically using correlation analysis tools).
As it has already been noted in the “Literature Review” section, consumer spending is wholly determined by income, the changes in income and income expectations. Thus, it’s the first parameter, that needs to be included into the model. GDP and GNI are traditional measures of income, widely used in international research (Nicklaus, 2015).
Population is the second main factor, which determines household final consumption expenditure.

Market interest rates, being a result of monetary policy, influence domestic demand both from demand and supply side. Firstly, it influences through price channel (for example, equity price channel (Tobin, 1969), as nominal interest rates predetermine both inflation rates and inflation expectations. Secondly, they determine cost of capital, and the higher cost of capital discourage investments, while lower cost of capital discourages consumption, increasing investments. Thirdly, market interest rates influence domestic demand through credit channel (Akerloff, 1970; Ramey, 1993), bank-lending channel (Ramey, 1993; Meltzer, 1995; Mishkin, 1996; Edwards and Mishkin, 1995), other asset-price channel, balance-sheet channel (Stiglitz and Weiss, 1981), exchange rate channel etc. The lending interest rates are included into the regression model.

Fiscal expansion may stimulate consumption from both demand and supply sides. If the government increases social spending, this leads to higher disposable income and may increase private consumption both in short and medium rum. Investments in infrastructure or spending on small and medium enterprises support influence from the supply side, generating a positive response in output in medium- and long-term perspective (Galí et al., 2004; Blanchard and Perotti, 2002).
Unemployment causes a drop in income, generating a need for liquidity (Ganong; Noel, 2017). Thus, household final consumption expenditures may decrease.

In order to assess significance of determinants of household final consumption expenditures the following specification of regression model was estimated:

$$LnHFCE_{i,t} = \beta_0 + \beta_1 LnGNI_{i,t} + \beta_2 LnPopul_{i,t} + \beta_3 LnGGTE_{i,t} + \beta_4 LnLIR_{i,t} + \beta_5 LnUnemploy_{i,t} + \beta_6 AFC + \beta_7 GFC + \varepsilon$$

where

$LnHFCE_{i,t}$ - log-level of household final consumption expenditure in a country i at time t,

$LnGNI_{i,t}$ - log-level of GNI (gross national income) in a country i at time t,

$LnPopul_{i,t}$ - log-level of population in a country i at time t,

$LnGGTE_{i,t}$ - log-level of general government total expenditure in a country i at time t,

$LnLIR_{i,t}$ - log-level of lending interest rate in a country i at time t,

$LnUnemploy_{i,t}$ - log-level of unemployment level in a country i at time t,

AFC - a binary variable, which equals “1” in 1997 (the Asian Financial Crisis) and “0” in the rest of years,

GFC - a binary variable, which equals “1” during the years of the Global Financial Crisis and “0” in the rest of years,

$\beta_1 \cdots \beta_7$ – elasticity coefficients by the respective variables,

ε – error of the model that includes omitted variables and unobserved country effects.

The model was estimated for both 13 Asian countries and a group of 110 countries from all over the world. The empirical work considers data for 26 years (1991-2015). The analysis uses a variety of data sources: the World Bank Database (2017) and the IMF World Economic Outlook Database (October, 2017).

Each of two models with panel data was tested according to three methods: simple ordinary least squares, the fixed-effect models and the random-effects models. The best model selection based on the results of the Hausman specification test and Breusch and Pagan Lagrangian multiplier test for random effects.

4. Discussion

4.1. East Asia: Policy Outlook

Amid continued weakness in global trade governments and monetary authorities in Asia work out packages of measures to stimulate domestic demand in order to bolster economic growth in the region.

Most of the emerging countries continue monetary easing, reducing policy interest rates and requirement reserve ratios, implement macroprudential policies to lower risks regarding the volatility in capital flows and asset prices, driven, mainly, by foreign investors. Besides, lower inflation and oil prices have allowed room for fiscal management: tax reforms and higher governmental expenditure for consumption-led growth. The Governments raise public spending and strengthen efforts to encourage steady growth of real wages in spite of declined growth in productivity in most of the countries in recent years.

Monetary policy in most of Asian countries aims to increase money supply, lower interest rates and provide better access to financial resources and services for private households, small and medium enterprises.

Financial sector reforms, captured in the Road map, following the results of the Third Plenary Session of the 18^{th} **China** Communist Party (CPC)’s Central Committee held in Beijing on 9-12 November 2013, and higher competition among state-owned, private and foreign banks aim to provide access to financial services for private households and small and medium enterprises, allocate investments and massive savings to more productive investment projects. In order to stimulate private consumption and meet demand for cash, the PBoC injected more than $42 billion into the economy in early 2014. Besides, the policy interest rate was decreased several times in 2015 and PBoC cut reserve requirements ratio (the amount of cash that the banks are required to hold as a reserve) for all banks several times in 2015 and early 2016. In recent years, Bank of **Japan** has also been rather consistent in conducting money market operations, raising the money base by about $430-500 million annually. The monetary authorities introduced a negative short-term interest rate and zero long-term interest rate policy. Low inflation allows easing monetary policy in **Republic of Korea**. For the period from 2013 to 2017 the policy interest rate had been decreased from 2,5% to 1,23%.

Indian monetary authorities lowered policy interest rate several times from 2014 to the mid-2017, which resulted in its decrease from 8% to 6%. The reserve repo rate lowered from 7% to 5,75% during the same period and the statutory liquidity ratio – from 22,5% to 19,5%/

Some of the **ASEAN** members, especially relatively less developed ones, have also been successful in stimulating private spending through monetary instruments. New reforms and plans may also contribute to better access to financial services and higher expenditures in the near future. The monetary authority of **Brunei Darussalam**, relaxed in October 2015 some conditions on unsecured personal credit. Moreover, the country has released plans to establish a stock market and create an Islamic bond market in order to boost sharia-compliant financial services. **Indonesia** cut the policy interest rate several times from 7,5% in the late-2015 to 4,3% by 2018. Besides, monetary authorities cut reserve requirements twice – in December 2015 and March 2016. At the same time, **Malaysia** reduced reserve requirement ratio by 50 basis points. Moreover, the policy rate was cut by 25 basis points in mid-2016, it was the first reduction in seven years. **Thailand** cut interest rates three times for the period between 2013 and early 2014 and twice in the first half of 2015 up to the rate of 1,5%.

Most of the East Asian countries relied also on **fiscal** instruments for consumption stimulation.

China tends to provide higher disposable income through fiscal instruments, strengthening social protection of the population and developing social welfare. **Japan** conducted a wave of reforms in pension system: the Government extended employees' pension insurance to more part-time workers, lowered a requirement on duration of employment needed for the national pension from 25 to 10 years, rationalized and simplified pension service and public pension schemes. In 2013, the Government released a fiscal stimulus package of about $116 billion for large investment projects and mechanisms to stimulate private investments. Japanese government supports national economy by higher social security spending, a postponement of a consumption tax hike to 2019 and investments in preparation for the 2020 Olympics. The **Republic of Korea**'s fiscal policy also aims to support small and medium enterprises. In 2013, the Government enacted a supplementary budget worth about $980 million; in 2015, the supplementary budget amounted to about $9 billion. In recent years, the Korean Government has undertaken extensive pension and tax reforms. The taken measures provide additional tax incentives to those companies that provide higher average salaries and increase childcare benefits to their employees. To maintain the competitive edge of its leading industries, the Government has introduced industrial restructuring, support schemes for the participation of small and medium-sized enterprises in global supply chain and various deregulation measures. Moreover, such programmes as reverse mortgages and diversified income streams for elderly citizens could support future private consumption while addressing the issue of population ageing.

In **India**, a set of measures is being developed to increase the incomes of the rural population. In order to reduce costs and increase the incomes of producers of agrarian products, schemes for their concessional lending have been developed, and investments in infrastructure projects in the country's agrarian regions are expanding. Along with these measures, tax privileges are introduced for manufacturers of digital technology and companies in IT-sector, schemes are being developed to facilitate their access to credit resources. The introduction of a single tax on goods and services, replacing all indirect taxes, is designed to simplify the procedure of taxation, and to promote a change in the pricing scheme for goods and services.

Fiscal policy has been supportive of economic growth in ASEAN countries. The **Brunei Darussalam**'s Government worked out a set of measures to support small and medium enterprises, through public procurement and better access to financial services. **Cambodia** enhances public spending. To support rice farmers the government waived value-added tax on agricultural products and offered low-interest loans. In the **Philippines** significant social spending underlies an expansionary 2016 national budget. Budgeted government spending in 2017 was more than 10 per cent higher than that in 2016, with an increase being focused on education and infrastructure development. **Singapore** announced plans for higher health-care spending and introduced higher corporate income tax rebates for small and medium-sized enterprises. The Government introduced an industrial transformation programme, which promotes automation and R&D through tax allowances, financial support and loan guarantees. It also co-funds wage increases for firms that have implemented productivity enhancement. **Thailand** was among those, using fiscal instruments for private consumption stimulation relatively more intensively. In late 2015, the country introduced a new package of short-term stimuli worth $9.58 billion, directed mainly to SMEs in the form of loans and tax breaks. Besides, in August 2015 the Government launched the National Savings Fund, which is going to provide social insurance for the self-employed. At the same time, low-income households are provided with cash transfers. Higher thresholds for personal income taxes and soft loans and tax breaks for farmers also aim at rebounding consumer spending growth. Infrastructure investment, especially in transport and energy infrastructure may also stimulate the economy in medium- and long-run. **Indonesia**n authorities introduced tax cuts for lower-income workers in July 2015 and increased budget spending for social development. Moreover, the government enhances investments in infrastructure. An increase in the tax-free threshold was also aimed at supporting consumer spending. Fiscal policy in **Malaysia** has also been supportive of economic growth, private consumption benefited from smaller employee contributions to the retirement fund and lower income tax rates. In **Vietnam** private consumption would benefit from higher minimum wages.

Nevertheless some of ASEAN countries conduct relatively more "balancing" macroeconomic policies, when monetary easing and enhanced public spending may be followed by tighter macroprudential measures in an attempt to secure macroeconomic stability in countries with higher inflation, lower risks of financial market overheating and reign in asset bubbles.

In 2013 between June and November **Indonesia**n monetary authorities raised a policy interest rate by 175 basis points in order to "cope with rising inflation and to stem capital outflows" (Economic and Social Survey of Asia and the Pacific 2016). Besides, in 2013 the central bank tightened the loan-to-value limits on mortgages for some types of properties and introduced more stringent rules on down payments for housing and automobiles. **Lao PDR** also tightened monetary and fiscal policies in 2015 to protect the economy from asset price build-ups. **Malaysia** introduced goods and services tax and kept its policy interest rate unchanged. The policy interest rate is also kept unchanged in the **Philippines**. In early 2016 **Myanmar** introduced more stringent rules on reserve requirements and **Singapore** raised its interbank rate to the highest level for seven years in December 2015.

The same trends have been relevant in recent years to the North-East Asian countries. In mid-2013 **China** raised the 7-day repo rate to 12% and the overnight repo to 25% in an attempt to prevent speculations, but the hike was momentary and was followed by lowering trend in 2014. In 2016 concerns about the overheating of the Chinese real estate market are still relevant, which may provide tightening the PBoC's policy, although earlier in 2013 the Government eased restrictions on home purchases. Chinese consumer potential is also limited by high retention rate of corporate earnings. Besides, despite the general course on market-oriented reforms, directed to interest rates deregulation and exchange rate financial mechanism, the devaluation of the renminbi, conducted in August 2015 witnesses that Chinese monetary authorities are still reluctant to ease control. All these challenges can be named among structural impediments that may hamper implementation of consumption-led growth model.

The **Japan**ese economy has suffered from the negative impacts of the consumption tax increase in 2014 (from 5% to 8%), but plans to introduce another increase in 2017. The measure, aiming, mainly, at consolidating fiscal debt, may undermine the population's propensity to consume and cut household spending, reinforce deflationary pressure and hamper economic recovery. The Republic of Korea increased its policy interest rate in late-2017.

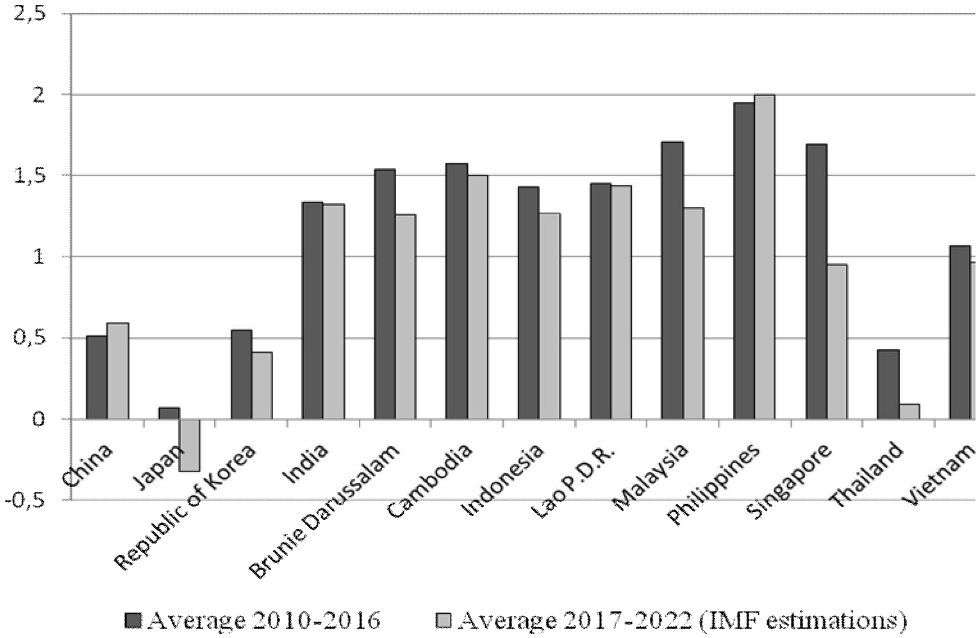
4.2. Social and Demographic Component of Consumption Growth

Demographic situation in some countries of the region can become one more impediment that can make the transition to consumption-led growth more difficult. According to the UNESCAP estimates "the size of the working-age population in all major economies in East and North-East Asia is going to shrink after 2020 to the extent that the elderly could account for up to one third of the subregion's total population by 2035" (ESCAP, 2016).

Unlike most of countries in developed world, developing Asian countries retain **positive paces of population growth** (see Figure1), that are going to remain according to IMF estimations to 2022.

Thus, this trend will contribute to rising consumer potential of the region. However, paces of population growth differ: Cambodia, Brunei Darussalam, Malaysia and the Philippines are among the leaders on a respective indicator with the later, expecting even higher average pace of population growth in coming five years. China, Republic of Korea and Thailand faced relatively lower population growth - 0.51%, 0.55% and 0.43% annually in average between 2010 and 2016, respectively.

Figure 1: Average Annual Pace of Population Growth in Asia, %



Source: author's calculations based on World Economic Outlook Statistic Database, October 2017

It's expected that population growth pace in China will rise in long-run, mainly, due to the relaxation of a decades-long one-child policy. At the same time IMF experts predict lowering of population growth in Republic of Korea and sharp drop of the respective indicator in Thailand (although it will remain positive). India, Indonesia, Laos and Vietnam's population also grew at more than 1% annually in average between 2010 and 2016. Thus, share of ASEAN members, excluding Thailand, and especially, relatively less developed countries ASEAN-4 had been increasing gradually and this trend is expected to remain in coming years. Besides, Asian consumption is expected to be driven by India, because of significant population and relatively high pace of its growth.

Nevertheless, it's highly important to analyze not just trends of population growth, but **working-age population trends**, as the later determine consumer potential of East Asian countries.

Although China, Republic of Korea, Singapore and Thailand have the highest shares of working-age population (Table 1), they have faced their declines in recent years. In China the downward trend started in 2011, and it may slow down the economic growth in coming years. At the same time, Brunei Darussalam, Cambodia, India, Indonesia, Lao PDR, Malaysia, Myanmar and the Philippines are among those with gradual increase of working-age population to total amount and the share is projected to increase in long run.

Table 1. Share of Working-Age Population (Ages 15-64) in Total Population

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
China	73,29	73,56	73,71	73,75	73,71	73,56	73,32	73,01	72,64	72,29
Japan	65,71	65,25	64,73	64,15	63,54	63,28	62,22	61,58	60,99	60,5
R. Korea	72,61	72,83	73,03	73,19	73,27	73,34	73,36	73,29	73,13	72,91
India	63,02	63,32	63,64	64	64,3	64,66	65	65,39	65,71	66
Brunei Darussalam	69,7	70,02	70,34	70,64	71,09	71,45	71,75	72,01	72,24	72,29
Cambodia	61,04	61,77	62,42	62,94	63,28	63,65	63,97	64,18	64,28	64,35
Indonesia	65,65	65,87	66,04	66,18	66,4	66,56	66,69	66,85	67,05	67,15
Lao PDR	57,71	58,52	59,29	60,02	60,57	61,11	61,62	61,58	62,4	62,78
Malaysia	65,8	66,2	66,65	67,13	67,66	68,13	68,53	68,88	69,17	69,3
Philippines	60,29	60,82	61,4	61,96	62,25	62,53	62,78	63	63,2	63,35
Singapore	72,81	73,04	73,34	73,65	73,63	73,51	73,32	73,07	72,81	72,47
Thailand	71,41	71,61	71,77	71,9	71,81	71,73	71,65	71,56	71,44	71,4
Vietnam	67,79	68,60	69,28	69,78	70,09	70,26	70,31	70,27	70,17	70

Source: the World Bank (2017)

Rising middle-class is another factor that will contribute to the consumption-led growth strategy implementation. Within the coming years many economies of the region will see a significant growth of GDP per capita and middle class (Kharas, 2011; Kerschner, and Huq, 2011).

Nielsen forecasts indicate that wealth in Singapore will double by 2020, while Malaysia's wealth is going to be nearly two and a half times larger by 2020, wealth in Thailand and the Philippines will nearly triple and in Indonesia will be almost four times higher (Leggett, 2014; Küng et al., 2015). As a result, according to the Nielsen estimates, the middle class for ASEAN may grow from 30% of the population to 55% by 2025, becoming a driver of regional consumption and economic growth.

The lower-middle class constitutes the predominant share of the population in most developing East Asian countries (excluding such affluent countries as Singapore, Republic of Korea and Malaysia) and high-income class is miniscule (Southeast Asia's middle class is diverse… 2016).

Thailand and Malaysia refer to so called upper middle class countries, as they have relatively more favorable income distribution among ASEAN members with highest shares of middle class – more than 30%. At the same time, they have larger shares of population with high income (about 40% in Malaysia and 20% in Thailand) and tiny shares of poor population (less than 1%). Vietnam, the Philippines and Indonesia can be included into the second group: middle class is constitutes from 10% to 20% of the population, besides they have extensive transitional class (living on $2-$10 per person per day) which may transform into middle-class by 2020 due to the conducted income-stimulation policies. Transitional class in India accounts for more than 70% of its population. Thus, despite relatively high share of poor (about 20%) Indian middle-class has long-term potential for growth. China has also demonstrated high pace of middle-class growth from 1990 to 2013 up to more than 20%, the share of population with high income is about 7-8% and transitional class of more than 60%, which is the main object of income-stimulation measures taken by the government. Thus, China is expected to be the main middle-class growth driver in the region in coming decade (Economic and Social Survey of Asia and the Pacific, 2016; Regional economic outlook. Asia and Pacific, 2016).

It's expected that by 2030 China will aggregate 564 million people joined middle class, India – about 380 million people. In the Philippines, the number of people that are going to join middle class by 2030 will amount 40 million and 31 million in Indonesia according to the Switzerland Global Enterprise estimates (Küng et al., 2015).

Employment is a one more factor, influencing consumer potential significantly. Unemployment rate is the lowest in Thailand, Lao PDR and Cambodia (Table 2).

Table 2. Unemployment Rate in East Asia, % of Total Labor Force

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
China	4	4,2	4,3	4,14	4,34	4,47	4,54	4,59	4,61	4,65
Japan	3,833	3,983	5,075	5,058	4,583	4,325	4,008	3,583	3,33	3,13
R. Korea	3,25	3,175	3,65	3,725	3,408	3,225	3,125	3,542	3,63	3,71
India	4,06	4,12	3,75	3,54	3,53	3,62	3,46	3,41	3,49	3,51
Brunei Darussalam	5,97	5,99	6,04	6,16	6,11	6	5,88	6,97	6,84	6,94
Cambodia	0,87	0,44	0,19	0,35	0,2	0,16	0,3	0,18	0,18	0,2
Indonesia	8,06	7,21	6,11	5,61	5,15	4,47	4,34	4,05	4,51	4,12
Lao PDR	1,06	0,91	0,76	0,71	0,7	0,69	0,68	0,66	0,65	0,66
Malaysia	3,225	3,325	3,675	3,3	3,05	3,025	3,1	2,85	3,15	3,44
Philippines	3,43	3,72	3,86	3,61	3,59	3,5	3,5	3,6	3,33	3,13
Singapore	3,9	3,96	4,3	3,17	2,97	2,88	2,79	2,8	1,69	1,8
Thailand	1,18	1,18	1,49	0,62	0,66	0,58	0,49	0,58	0,6	0,94
Vietnam	2,6	2,38	2,61	2,64	2,02	1,77	1,95	1,77	2,12	2,1

Source: the World Bank (2017)

In less developed countries, such as Lao PDR and Cambodia low levels can be explained by data constrains, while in fact, labor market is relatively unstable: many jobs are informal, vulnerable and poorly rewarded. Thailand is followed by Singapore and Vietnam. China, Japan, Republic of Korea, Indonesia, Malaysia and the Philippines face relatively higher unemployment levels in spite of general downward trend since 2006, thus the priority of social policy in these two countries is to ensure job creation. Brunei Darussalam suffers from the highest unemployment rate.

5. Empirical results

In order to assess quantitatively an influence of each factor on household final consumption expenditures each of two models with panel data was tested according to three methods: simple ordinary least squares, the fixed-effect models and the random-effects models. The best model selection based on the results of the Hausman

specification test and Breusch and Pagan Lagrangian multiplier test for random effects. In both models – for a group of 13 Asian countries and 110 countries from all over the world, the random-effect model was selected as the most appropriate.
The estimation results of the two models are presented in Table 3.

Table 3. Augmented gravity model estimation for 2 models of Russian export, random-effects models, 2007-2015

Model 1. 110 countries		**Model 2. 13 Asian countries**	
Explanatory Variables	REM Regression	Explanatory Variables	REM Regression
LnGNI	0,820867***	LnGNI	0,4919923***
LnPopul	0,0805438***	LnPopul	0,1931493***
LnGGTE	0,0691789***	LnGGTE	0,3373378***
LnLIR	-0,0663112***	LnLIR	-0,0631995*
LnUnemploy	0,0193631	LnUnemploy	-0,0377802
AFC	0,0005724	AFC	0,0364263
GFC	0,0191334	GFC	-0,0163145
_const	-0,3799174**	_const	1,076494*
R^2:		R^2:	
within	0,9301	within	0,9416
between	0,9905	between	0,9852
overall	0,9862	overall	0,9812
Wald	chi2(7)=48680,84 Prob>chi2=0,0000	Wald	chi2(7)=6191,81 Prob>chi2=0,0000
Hausman test	chi2(5)=38,04 Prob>chi2=0,1017	Hausman test	chi2(5)=7,25 Prob>chi2=0,2027
Breusch and Pagan Lagrangian multiplier test	chi2(1)=12242,57 Prob>chi2=0.0000	Breusch and Pagan Lagrangian multiplier test	chi2(1)=1237,82 Prob>chi2=0.0000
Number of observations	2860	Number of observations	338
Number of groups	110	Number of groups	13

The panel data analysis allows comparing the influence of the same determinants on Asian and global final consumption expenditures.
The overall R^2 equals 0,99 for the first model of 110 countries and 0,98 for Asian countries, which means that the model explains 98-99% of the variation in countries' household final consumption expenditure.
The analysis confirmed statistical significance of the same set of influencing variables: gross national incomes, population, general government total expenditures and lending interest rates.
The growth in GNI increases household final consumption expenditure in all countries, but to different extent. 1% increase in GNI stimulates household final consumption expenditure by 0,82% in average for the group of 110, while for the group of Asian

countries it increases household final consumption expenditure just by 0,49%. This fact confirms traditional high propensity to save of the Asian population.

At the same time 1% population growth leads to the 0,19% increase in household final consumption expenditure in Asia, while the effect is much lower for a group of 110 countries (about 0,08%).

The variable "Lending interest rates" is significant in both specifications and the coefficients demonstrate inverse direction consistently with the theoretical models. The higher access to financial resources stimulates household final consumption expenditure, while monetary tightening leads to the higher saving rates. Thus, monetary easing, being one of the key components of contemporary macroprudential policies in Asian countries, may contribute to consumption-led growth.

Expansionary fiscal policies – the second component of macroprudential reform packages can be even more efficient in the short-run. The factor of general government total expenditure is statistically significant in both specifications, and demonstrate direct correlation with the dynamics of household final consumption expenditure. Moreover, the influence of this factor in the Asian region is much higher: 1% increase in general government total expenditures stimulates household final consumption expenditure by 0,34%. That is much higher in comparison with the result in the first model, on the one hand, and much higher, than the influence of monetary influence, on the other hand.

Unemployment rate is statistically insignificant in both models, the same results have been observed for the dummy variables, which describe the influence of the Asian Financial Crisis (1997) and the Global Financial Crisis (2008-2009).

6. Conclusion

East Asian countries are going to develop under the influence of three main trends. Firstly, GDP per capita and household incomes are rising steadily (Lahoti et al., 2015). Secondly, higher share of household incomes is expected to be spent on consumption due to consumption-stimulating policies. Thirdly, most of the countries of the region demonstrate tendency of rising population, which contributes to higher consumer potential of the region.

As the middle class in most of Asian countries is growing dramatically and population's purchasing power is increasing, the region's consumer potential is going to become a driver of regional economic development.

The calculations indicate that income-stimulating policy may bring substantial results to boosting of household final consumption expenditure. There is a positive correlation and causation between the parameters. These findings correspond completely with the existing literature (Hall, 1978; Macklem, 1994; Nicklaus, 2015; Arapova, 2017 etc.) and classical consumption function (Keynes, 1936). Nevertheless, the transmission from rising incomes to final consumption expenditures differs across regions, influencing Asian consumption to a lesser extent.

The research proved that higher governmental expenditure may become a relatively efficient instrument for consumption-led growth in Asia (as in Galí et al., 2004; Blanchard and Perotti, 2002). At the same time, influence of interest rates and other monetary instruments on national spending is limited and this conclusion conforms to those made by Tuuli Koivu (2010).

Thus, in short-run fiscal instruments can be relatively more efficient compared with monetary ones (interest rates and RRRs manipulations). This conclusion stems from the findings of the panel data analysis, underlying the research and corresponds to those conclusions made by Zakaria (2007), Ananchotikul and Seneviratne (2015), Tuuli Koivu (2010) and others, although the studies covered different periods and countries.

China, India, Thailand and Republic of Korea are among those countries, that are expected to drive regional economic growth in coming decade. These four countries conduct supportive fiscal policies using various instruments (fiscal stimuli), which may bring significant positive effect on private consumption and tend to monetary easing, stimulating private household expenditures.

China will remain a key driver of regional consumption-led development in both medium- and long run due to substantial population (in absolute terms and as a share of population of the region), high pace of middle class growth and favorable demographic structure (high share of working-age population). Besides, Chinese government and monetary authorities implement consistent consumption-stimulating policies, using various instruments.

India will be the second driver of regional consumption growth due to substantial population, and higher pace of its growth, rising share of working-age population and relatively low unemployment rate. The effects of income growth can be expected mainly in long run.

Indonesia and the Philippines will contribute to the regional consumption-led development mainly by rising population.

In spite of small shares of population in total population of the region Thailand and Republic of Korea may become those countries, which's contribution to regional consumption may rise substantially by 2020-2025. Thailand has seen substantial increase in middle class in recent years and the rate of unemployment is the lowest. Besides, the country has actively used both monetary and fiscal instruments for stimulation of private household expenditures and the efficiency of the policies is high. Republic of Korea demonstrates the second high share of working population, consistent and extremely efficient consumption-stimulating macroprudential policies.

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