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Editorial office of the «Journal of Global Economy Review», Department of Business Administration (Kozani), Technological Educational Institute of Western Macedonia, Campus Kastoria, Box 30, 52100 Kastoria, Greece

Tel.: +30 (24670) 87181

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VOLUME 1, № 5, 2016

TABLE OF CONTENTS

ARTICLES

- Public Debt: Ukrainian Realities
OLEKSANDR BETZ, ANDRII KRYSOVATYY, VIKTOR FEDOSOV [pp. 4-13]
- State Promotion of Companies' Adaptation to New Challenges and Threats
of Export Marketing Activities
IGOR GOLUBII [pp. 14-21]
- Global Labour Market Development: Factors, Trends and Prospects
ROMAN STAKANOV [pp. 22-28]
- Regional Focus on International Trade Flows
PETRO YAREMOVYCH [pp. 29-33]
- Global Economy and Innovation Process Fragmentation
TATIANA OSTAPENKO [pp. 34-42]
- Development of International Tourism in Greece
KONSTANTIA DARVIDOU [pp. 43-50]
- Regulators for Adaptive Enterprise Development
NATALIIA MARYNENKO [pp. 51-56]
- Financial Balance as a Tool for Macro-Financial Planning
IVAN MEDVETSKYI [pp. 57-62]

RESEARCH MATERIALS

- Review of China's Agricultural Policy: Biofuels Development
and Implications (2016)
OLEKSANDR ROGACH, OLEKSANDR PIDCHOSA, IULIIA SHKRABALIUK [pp. 64-74]
- Comparative Analysis of International Investment Processes
in the USA and China
BOGDAN KUZ'MENKO [pp. 75-82]
- Development of Rare-Earth Industry in Russia
TATIANA YAROSH [pp. 83-87]

Public Debt: Ukrainian Realities

OLEXANDR BETZ¹

ANDRII KRYSOVATYY²

VIKTOR FEDOSOV³

Abstract: The paper investigates the public debt and macroeconomic and macro-financial aspects of its development in Ukraine. The assessment of the relationship between the public debt and fiscal indicators is made in the context of financial stability and sustainability. The relationship of the public debt and monetary indicators and its impact on inflation and price stability in the context of fiscal sustainability and macroeconomic balance are analysed. The causality of public debt is revealed. Dialectic, as well as economic, financial and social, effects of the debt policy are defined. The directions for the debt policy improvement in Ukraine are offered.

Basic Results of the Research

Today, the Ukrainian economy is developing in a complex extraordinary environment of government finance crisis, significant weakening of financial stability and equilibrium, and acute internal and external challenges. Further prospects for macroeconomic and macro-financial stability in Ukraine primarily depend on the ability of the Government to reform the economy and finance, to effectively fight corruption and embezzlement at all levels of public administration. The need for successful solution of these challenges requires decisive actions and appropriate amount of financial resources. In these circumstances, all real sources of funding should be used. But now virtually, the only possible way out of this difficult and highly threatening situation and the best method of covering the financial resource deficit is raising funds through a system of debt finance.

The effective use of public credit really allows the state to survive, to meet the urgent current problems, to balance the needs of the present and future development, expanding the fiscal financial opportunities. However, in recent years, when the involved financial resources were used for current budget expenditures, the increase of borrowing costs in the economic and financial crisis has led to the alarming growth of public debt and the cost for its servicing. All this shows the growing role of debt finance, the important role of the public debt in the economic policy of the state, and its financial security. So, now the urgent task of economic theory and finance practice is to develop a rational policy of public borrowing, which will allow using the potential of debt finance, while minimizing the negative effects of public debt.

The public debt, as a result of debt capital movement in the system of public credit, has now become a permanent, immanent component of government finance and an important tool for a system of macroeconomic regulation. However, in Ukraine in recent years the use of financial resources for current budget expenditures, raising of borrowing costs in times of economic recession and crisis have led to the alarming growth of public debt and the cost for its servicing. All this transformed the public debt into a significant risk factor for macro-financial stability and further development of the country.

The principles of economic nature, the nature and functioning of public credit and public debt have been explored in financial literature to some extent. The works by the representatives of Ukrainian classical school of public finance of mid 19th - early 20th century and by modern national scientists and financiers

¹ Candidate of Economic Science, Associate Professor of Finance, Vadym Hetman Kyiv National University.

² Doctor of Economics, Professor, President, Head of Tax and Fiscal Policy Department, Ternopil National Economic University.

³ Doctor of Economics, Professor, Honorary Figure of Science of Ukraine, Head of Finance Department, Vadym Hetman Kyiv National Economic University.

have taken the proper place in this research. Important contribution to the study of these complex problems was made by modern Western economists. However, in the financial literature in general and in our national, in particular, there are scanty works devoted to theoretical and methodological principles of public credit and public debt. Without deep disclosure of these matters it is impossible to explore the theoretical background and nature of public debt and, consequently, to build a sound debt policy. The development of an effective debt policy as an integral part of macroeconomic and institutional mechanism of the state will provide financial stability to promote sustainable economic growth and to minimize the negative impact of external factors. Therefore, research on the public debt and its role in ensuring fiscal sustainability and macro-financial stability is urgent now.

Formation of public debt is an integral part of the economy and an important tool for macro-financial regulation. Qualitative (structural) and quantitative (dynamic) characteristics of debt formation are linked to all macroeconomic and macro-financial processes in the country. According to the dynamics of macroeconomic and macro-financial indicators (for the years of Ukrainian independence) three main stages of national debt formation in Ukraine could be distinguished: 1991-1996 – recession; 1997-2007 – relative macroeconomic stabilization in some segments of the economy and finance; 2008-2015 – financial and economic crisis and post-crisis period.

During 1991-1996 the combination of expansionary fiscal and monetary policies, the existence of high budget deficit and emission financing led to disruption of macroeconomic and macro-financial stability and hyperinflation processes. The debt policy of Ukraine has been formed and focused on meeting the short-term fiscal objectives. Raising funds through loans was carried out without full institutional and legal framework for public credit institution operation. In the debt structure the external debt prevailed. In that period loan securities were issued, which gradually replaced the direct NBU loans for financing the budget deficit. The value of public debt in that period exceeded the optimal limits resulting in excessive servicing costs.

At the stage of relative macroeconomic stabilization in some segments of the economy and finance in 1997-2007 the state debt policy as a whole did not promote sustainable development, but rather adversely affected the social and economic aspects. The continued negative trend of public debt in 1997-1999 under the high cost and short-term of borrowing transformed the public debt into real macroeconomic and macro-financial threat to the development of the country. In 2000, the debt reached a critical point of 60% of GDP. The consequence of this policy was the default of the state on the debt liabilities and foreign currency crisis. The credibility of the state as a fund borrower has been lost for a long time, thus producing a negative effect on selecting investors. After numerous external debt restructurings, the international capital markets happened to be virtually closed to Ukraine. The internal debt crisis limited the Government's possibilities to domestic borrowing, forcing the state to switch to a policy of reducing the debt burden (Vakhnenko T.P.: 2006, p. 262).

During 2001-2007 a tendency was observed to reduce the size of public debt and, consequently, the costs for its servicing dropped, and that could be taken for a positive trend. It should be noted, that the potential of public loans, particularly, their investment component, has hardly ever been used. As a result of giving priority to external borrowing in the structure of external public debt, its share increased year by year, which made the currency risks grow. The market of public loans continued to serve for meeting the only fiscal interests of the Government. The state actually did not use the market instruments, which greatly reduced the effectiveness of fiscal and debt policy.

The irrational and situational debt policy formed significant risks to macro-financial stability in the country in crisis and post-crisis period. This rapid increase in public debt was accompanied by further ineffective use of attracted resources for current needs of the Government. This debt policy has rapidly exhausted the possibilities to mobilize additional financial resources transforming the public debt into the source of risks to fiscal and monetary stability. Synergistic negative effects of public debt and worsening of destructive processes in the economy put the country on the brink of pre-default state in 2014. Only signing the Stand-by Loan Agreement with the IMF for the period of 2 years on April, 30 2014 in the amount of 17 billion dollars and receiving the first two tranches of the IMF loan (3.2 billion and 1.5 billion dollars) enabled the country to finance the key expenditures, avoiding default in 2014. On March 11, 2015 the IMF approved a Stand by Program replacement with a new, four-year Program of "Extended Fund Facility". The first tranche of \$ 5 billion dollars within the new Program were received immediately after

its adoption. The provision of the second tranche of 1.7 billion dollars, which was fully channelled to replenish the National Bank reserves, was approved by the Board of the IMF Directors on July, 31 2015.

The new Program of cooperation between Ukraine and IMF provides for a number of terms, but all of them somehow are related to implementation of reforms aimed at stabilization of the Ukrainian economy and return it to the path of sustainable economic development. A new Memorandum of Cooperation with the IMF also provides for structural reforms, including the anti-corruption reform, judicial reform, deregulation and improvement of business climate, also the public enterprises' reformation, including "Naftogaz". At the beginning of October 2015 Ukraine received 6.7 billion dollars, then to be sent 2 more tranches of 1.7 billion dollars each. In 2016-2018 it is expected to be provided with 12 tranches of \$600 million. Together with the funds from other lenders Ukraine may receive up to 40 billion dollars. The amount of 40 billion dollars for financial assistance emerged as the result of the assessment of Ukraine's needs, and the latter will be covered from three sources: the IMF, funds of other international organizations, and private investors.

Currently, the actual situation cannot be justified specifically with military operations in the temporarily occupied territories, as far as the new Government is required to immediately conduct effective structural and institutional reforms. But the borrowings are still used to finance the budget deficit and repayment public debt service, replenishment of NBU reserves, that is, they are used for current fiscal needs, and that only respites the financial-economic and social problems of the country. Therefore, the urgent task is to channel financial resources borrowed from international organizations and foreign countries for necessary reforms aiming at actual use of debt finance for the needs of sustainable development and achieving macroeconomic and macro-financial stability. Without change in the priorities of the potential use of the public credit system, the debt accumulation will lead to rapid deterioration of the economy and finance.

Risks and threats of increasing public debt are especially manifested in fiscal and monetary plane. We will analyze in detail the role and importance of public debt as a risk factor for fiscal sustainability and macroeconomic stability, and examine its basic parameters in the context of the monetary component of macro-financial stability. The public debt is closely linked with fiscal policy in general and with budget deficit, in particular. The main reason of the public debt growth is the budget deficit. In recent decades, the growth of public expenditures in all developed markets was observed, resulting in agreement that the budgets were with deficits, and the public debt grew. If the budget deficit persists for a long time, steadily increasing public debt, the government's ability in conducting a stabilization policy is reducing. Under such conditions, interest payment on public debt is the main source of the state budget expenditures.

With significant amounts of public debt, its service costs may become the main or even the single reason for the budget deficit. If the GDP is unchanged or reduced, and the budget deficit continues to be financed by public debt increase, it can lead to a situation where tax revenues will not be sufficient to pay the interest on the debt. Therefore, to reduce the ratio of public debt to GDP it is necessary to have the budgetary surplus and excess of economic growth above the real interest rate. These findings are the basis of the theory of fiscal sustainability, which is the basis of current approach to debt policy. Achieving long-term sustainability of public finance is a priority of budget policy. In this case, sustainability is understood as solvency, i.e. the ability of the borrower to service debt avoiding default. The objective of the analysis of fiscal sustainability is to show what the current budget policy should be for the state to remain solvent and liquid in the long term perspective.

Budget constraint plays a key role in public finance assessment, fiscal policy interpretation, and anticipation of some shocks for the budget. It provides that the difference between the state expenditures and revenues is compensated by a corresponding change in the value of the Government debt. The stability of Government finance in the long run depends on the difference between rates on loans and GDP growth. Rates on loans usually exceed the growth rate of the economy. Therefore, to maintain sustainable debt levels, either tax rates should be increased or spending on goods and services and transfers to the private sector should be reduced, which can significantly reduce the positive short-term effects of debt financing.

In domestic practice it is advisable to go to the regular evaluation of the effectiveness of debt policy. Meeting this challenge involves development of clear (quantitative) indicators on the performance of public debt management. One of the methodological approaches that has proved its efficiency and is widely used in the practice of the developed markets is the "target method". According to this approach, by analyzing

the situation of national and international financial markets, and taking into account the needs of the state, specific indicators are developed and regularly recorded in a certain period that should be derived from the operations of borrowing and debt management. To determine the allowable size of public debt for the countries with emerging markets the following indicators should be included:

1) the share of public debt relative to GDP, which reflects the stability of public debt; higher level of coefficient ratio of public debt to GDP ratio means increased risks of default in the state due to growing debt servicing costs to GDP;

2) the proportion of foreign currency debt in total public debt, its higher value indicates the risk of potential increase in expenditures for repayment and debt servicing in case of depreciation of national currency (Danilenko A.: 2010, p. 236).

According to the Budget Code of Ukraine, the size of the public debt should not exceed 60% of GDP. In general, the dynamics of the state debt relatively to GDP reflects the stability of public debt and shows the government's ability to service the debt in the short and medium term, based on realistic assessment of economic development and availability of political and social factors that limit the effectiveness of fiscal policy. Setting the constitutional limitations of public debt is the most effective means of preventing political abuse of debt finance. Although its introduction and consolidation in the current political process is problematic as far as the current generation objectively is not interested in establishing strict constitutional barriers that would hinder shifting the debt on future generations, summarizes German professor S. Blankart (Blankart S. : 2000, p. 409).

Table 1

Dynamics of State Debt of Ukraine in 2000 - 2014

Indicator	2000	2002	2004	2006	2008	2010	2012	2014
1 Public debt, bln UAH:	64.2	64.5	67.7	66.1	130.7	323.5	399.2	947.03
internal	20.8	21.4	21.0	16.6	44.7	141.7	190.3	461.00
external	43.4	43.1	46.7	49.5	86.0	181.8	208.9	486.03
2 Guaranteed debt by the state, bln UAH	12.8	11.3	17.7	14.4	58.7	108.8	116.3	153.80
3 Total amount of state debt and guaranteed by the state debt, bln UAH	77.0	75.7	85.4	80.5	189.4	473.1	515.5	1100.83
4 Ratio of the state debt and guaranteed by the state debt of Ukraine to GDP (%)	45.3	33.5	24.7	14.8	20.0	39.9	36.6	70.3

Source: Calculated according to the Ministry of Finance of Ukraine.

During 2000-2007, the increase in nominal public debt was much lower than nominal GDP growth, which enabled to reduce the debt burden. The ratio of public and publicly guaranteed debt to the GDP in Ukraine was shrinking for 2000-2007 from 45.3% of GDP in 2000 to 12.7% of GDP in 2007. By 2007, the ratio of government debt to GDP decreased continuously keeping it at a relatively stable level, on the one hand, and high rates of economic growth – on the other. However, since 2008 the amount of public debt and its ratio to GDP has been increasing because of the unfolding crisis, and, consequently, the increased needs of the state in public borrowing, as well as in connection with the suppression of economic activity.

The ratio of public debt to GDP at the end of 2008 was 20%, and at the end of 2010 – 39.9%. In 2012, because of reduction in economic development and increase of the Government activity the public debt amounted to 36.6% of GDP. In the following years the trend lasted of public debt increase to GDP, which reached 70% in 2014. An important factor for a significant increase in the value of government debt in 2014-2015 years was hryvnia devaluation. Thus, in general, Ukraine's public debt grew from 64.2 to 947 billion UAH in 2000-2014, that is by 14 times. Over the same period, its share in GDP increased from 45% to 70%.

According to our estimates, the share of public debt to GDP will greatly exceed the point of 100% in 2016. The rapid growth of public debt produces a negative effect on all processes of socio-economic development of Ukraine, leading to significant risks for macroeconomic and macro-financial stability of the country. As a result of hryvnia devaluation (from 7.993 USD at the beginning of 2014 to about 15.8 USD at the end of the year) during 2014 the government debt of Ukraine increased by almost twice in UAH equivalent. In terms of GDP drop the ratio of the debt to GDP is worsening, thus, this figure of 2014 significantly exceeds the critical limit, and because of hryvnia devaluation and new borrowing, it is more than 110% of GDP.

The results of our calculations confirm that the budget deficit contributes to the growth of public debt in Ukraine. Thus, the increased service and discharge of the debt requires increasing the value of borrowing and increasing the tax burden; this means that the government borrowing has taken the form of taxes. Based on our calculations through using economic and mathematical modelling, we have determined that the increase in the budget deficit by 1% leads to an increase in debt to 6%, in tax revenues – to 0.66%, increase in spending on servicing and debt repayment – to 7.38%, resulting in an increase in the budget deficit additionally by 0.078%. Under such circumstances, to pay off the public debt and interest payments, ever bigger proportion of state budget revenues and GDP is channelled. Thus, we estimate that about 40% of the state budget in Ukraine is aimed to pay off public debt and interest payments in recent years, which practically means reduction of public goods and services' financing (Fig. 1). The analysis allows us to conclude that the national debt is now generating considerable risks to fiscal stability of the country. Significant amounts of borrowings under financial, economic and social recession further exacerbates the threats and risks to macro-financial stability in the country.

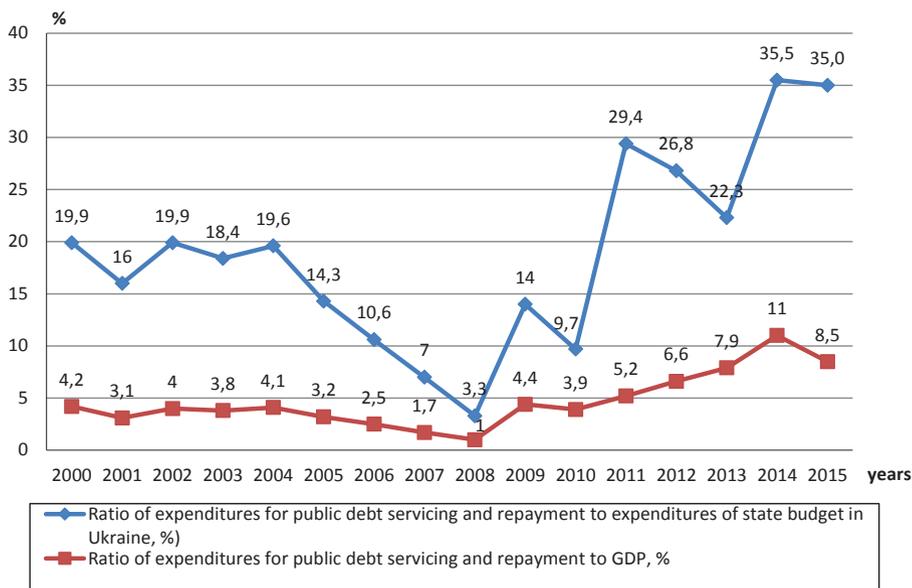


Fig. 1. Dynamics of expenditures for servicing and repayment of public debt in Ukraine in 2000-2015
Source: Calculated according to the Ministry of Finance of Ukraine.

To reduce the debt burden on the economy and the country's budget the foreign debt has been restructured. The IMF Programme on restructuring the foreign debt of Ukraine is aimed at meeting the following three objectives:

- 1 - savings in external debt payments of state debts and state-guaranteed debts, and public sector entities amounting to about 15.3 billion dollars for the period of the IMF Programme implementation;
- 2 - ensuring the ratio of public debt / GDP ratio of no higher than 71% by 2020;
- 3 - general support of the needs for budget funding on debt operations averaged 10% of GDP (up to 12% a year) in 2019-2025.

Restructuring external public debt was extremely necessary as far as it enabled the country to avoid default. According to the agreements signed with international lenders Ukraine was written off 3.8 billion dollars, and the terms for remaining debt amount payment – 15.5 billion dollars was respite for four years – from 2015-2023 to 2019-2027, but the rate of new Eurobonds yield increased to 7.75% per annum. For this purpose, instead of the existing 14 Eurobond issues (11 sovereign and 3 guaranteed by the state "Fininpro") and several state-guaranteed loans ("Ukravtodor", CB "Pivdenne" and "Ukrmedsnab") with an average coupon rate of 7.22% per annum 9 issues of roughly equal in volume new dollar Eurobonds

repayable annually in 2019-2027 will be released, with the coupon rate of 7.75% per annum. The accrued interests on existing securities will be capitalized into new Eurobonds.

In addition, the holders of Eurobonds in proportion to their share in the total restructured debt will get 20-year state derivatives. Payments for them will be made in cash in dollars, depending on the dynamics of growth of real gross domestic product of Ukraine. If the GDP growth for the year is below 3%, the payment for the securities will fail. If real GDP growth is between 3% and 4% the payment for the securities will amount to exceeding 15% of GDP over 3%, and if it is more than 4% it will account for plus 40% of exceeding GDP index over 4%.

These derivatives provided by the Government will act only after the nominal GDP of Ukraine increases 1.5 times and reaches \$ 125.4 billion (current IMF forecast in terms of GDP for 2019 in US dollars, which is equivalent to 3.183 trillion UAH under the current exchange rate). In 2021-2025 the state payments for derivatives (VRI) will be limited to 1% of GDP.

The restructuring and write-offs of a part of public debt enables to reduce debt risks and mitigate the debt burden on the economy. Successful debt restructuring, ensuring its stability, stabilizing the exchange rate, and real reforming of the banking sector and energy sector are key principles for positive decisions of rating agencies on long-term sovereign credit rating of Ukraine. The credit rating improvement of Ukraine at the end of November 2015 by the rating agencies of Fitch and Moody's from the level of "limited default probability " to the level of CCC and from Ca level to Caa3 respectively, is an important step to return Ukraine to the international capital market in the medium term, as stipulated by the IMF expanded funding program.

The growth of Ukraine's credit rating also facilitates Ukrainian companies and banks' access to international credit resources, and enables them to optimize their work in domestic and international markets. This will facilitate gradual recovery of the country's position in the international capital market and its macro-financial and macroeconomic stabilization. According to the World Bank forecast, under moderate economic recovery, gradual stabilization of the exchange rate and support of fiscal discipline, the public debt and the state guaranteed debt will be reduced by 2017 to 82% of GDP. Reducing the negative impact of the high levelled public debt on economic processes is actually possible under the condition of structural reforms in the economy, sustainable economic development, and comprehensive reforms in the fiscal area.

The public debt is correlated with the monetary and credit policy tools. The rising public debt is one of the reasons for rapid increase in money supply and inflation exacerbation. The modern financial studies include research mainly arguing interdependence of public debt and inflation. In particular, American economists T. Sargent and N. Wallace in the article "Some Unpleasant Monetarist Arithmetic" hypothesize that in the long run the debt service will lead to higher inflation rates than the deficit financing by the Central Bank's issuing loans. That is inflation, as they stress; it is rather a fiscal than monetary phenomenon, as Nobel laureate Professor M. Friedman argued (Sargent T., Wallace N.:1981, p.45.)

This is confirmed by a number of empirical studies. Specifically, American scientists L.Katayo and M. Terrones have analyzed statistics of the countries with emerging markets, developing countries and these with transition economies for 1970-2001. They revealed a strong direct relationship between the fiscal deficit and inflation (Catao L., Terrones M.: 2003, p. 14). Insufficient tax incomes, political instability, and limited access to external loans are observed in these countries.

However, some scientists deny the relationship between the deficit, debt and inflation. In particular, V. Buiter argues that the growth of public debt does not lead to a proportional increase in inflation rate, but is partly compensated by a decrease in the market value of debt (Buiter W.H.:1999, p.p. 34-35).

Despite the controversies in explaining the dynamics of inflation – its monetary or non-monetary origin – modern theoretical approaches to the analysis of the relationship between fiscal and monetary-credit policy allowed to form a rather coherent direction of economic science concerning the fiscal discipline as a prerequisite for monetary stability. Today, it is generally accepted that preventing excessive spending on the public debt servicing requires institutional coordination between the Central Bank and the Ministry of Finance on the volume of its monetization.

Our studies show that between the monetary aggregates and public debt there are immediate and direct inverse correlations (Fig. 2). Based on our analysis of the relationship between the monetary aggregates and public debt in the 2000-2016 in Ukraine the conclusion was made that the greatest impact

on the financial situation is produced by monetary aggregates M0 and M1. At that, the growth of debt by 1% causes a 9% increase in the monetary base and nearly 1% in cash and transferable deposits. And conversely, the impact of less liquid assets is much weaker compared to the aggregate of M0 and M1.

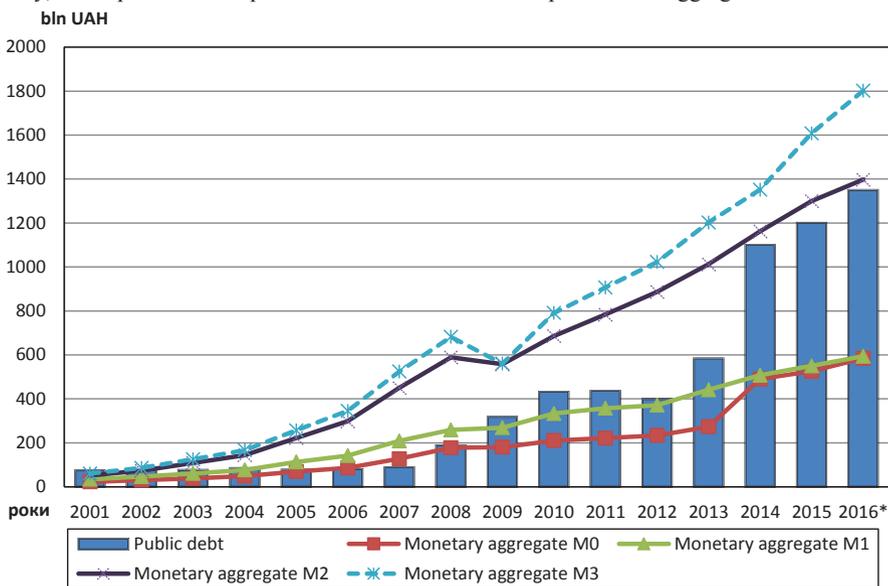


Fig. 2. Relationship of Monetary Aggregates and the Volume of Public Debt in Ukraine in 2000-2015
Source: Calculated on the basis of the National Bank of Ukraine.

Budget deficits and rising public debt lead to higher prices for financial resources, and, conversely, reduction of the deficit and / or achievement of budget surplus and reduction of public debt results in lower prices. In Ukraine, the growth of public debt almost by 2 times in 2008 (from 12.7% of GDP in 2007 to 20% of GDP in 2008) has been a factor for increasing of both, almost half the yield of government bonds and lending rates. Thus, the average weighted yield of government bonds with 6.71% in 2007 increased to 11.86% in 2008, the NBU discount rate, respectively – from 8% to 12%, the weighted average rate on loans – from 13.9% to 17.6%. In 2013-2015, because of the rising debt and the increase in the cost of government borrowing up to 18-23% per annum, the real rate on loans rose up to 25-35%, which minimized the credit activity. Thus, accumulation of public debt has been accompanied by the rising cost of government borrowing, causing increased prices on financial resources, increased rates on loans, reorientation of banks at the government lending. As a result, the monetary stability has been disrupted and threats to macroeconomic and macro-financial balance in the country have been created.

The public debt as a result of the system of government credit produces positive and negative economic, fiscal and social effects. Due to the government loans, the tax burden in certain periods could be actually reduced, compensating its fiscal consequences through higher taxes in future periods. This enables to have a certain economic, fiscal and social effects, having created conditions for meeting the needs of the fisk in the future. Negative effects of public borrowing are due to their form of tax anticipation, and that leads to further escalation of the crisis of government finance. The burden of public debt directly leads to additional taxation, which is necessary to paying and servicing the public debt. This process, in its turn, increases driving out private investment.

In summary, the magnitude of the effects of public debt directly depends on the nature of the loans and the value of reducing national savings (private and public). The recent authors' calculations and causation analysis of the negative effects of the public debt growth allow us to conclude that the debt increase in Ukraine in 2008-2015 led to a decrease in investment, sharp decline in industrial production and exports, decline in well-being of the population, and that rather worsened the macroeconomic and macro-

financial situation, and became one of the factors for pre-default state of the country. Based on the calculations it was established through the tools of economic-mathematical modelling that the growth of public debt by 1% leads to an increase of the tax rate by 0.1%, budget expenditures – by 0.03%, the budget deficit – by 0.36%, the index of consumer prices – by 5.58%, the yield of government bonds in the primary market – by 0.15%, reduction of capital investment – by 2%, and reduction in household savings – by 1.88%. And conversely, the reduction of public debt usually leads to positive changes in macroeconomic indicators.

The economic and social effects are reflected both in the fiscal and monetary area (ineffective National Bank's rate policy in Ukraine on maintaining the national currency). In this context, the state faces important and difficult tasks because of the changes in exchange rate policy and transition to the floating exchange rate, and further transition to the regime of inflation targeting. They are related to the necessity of macroeconomic and macro-financial stability, structural reforms and further development of the financial market. Economic, fiscal and social effects are aggravated through interaction and synergistic effects, manifested in negative consequences and side effects for macro-financial stability and macroeconomic balance. This results in the effect of private investment crowding through inefficient use of public borrowings, directing them for the current consumption, and inefficient functioning of the public sector as a whole. Ukrainian realities clearly demonstrate the validity of these conclusions.

Thus, the debt policy in Ukraine requires radical reformation. Irrational borrowing policy aimed at meeting the current needs of the Government has exacerbated risks to macro-financial stability in Ukraine. In 2014-2015, like in 1998-1999, the country was on the brink of the default. Inefficient fiscal and tax policies, lack of structural reforms in the energy sector and dollarized debt have increased the quasi-fiscal deficit component, and increased the debt vulnerability to a currency risk. Embarking on military operations in the East, along with the accumulated imbalances, significantly violated the macro-financial stability of the state.

Development of the debt policy should be based on the conceptual theoretical basis of state credit, through thorough understanding of the essence and nature of this complex, multifaceted and multispectral category. The debt policy should be aimed at implementing the public purpose of government credit, that is, to contribute to maximal financial opportunities of the fisk in order to provide financial resources necessary for the public welfare and sustainable economic growth. It really should be an integral part of fiscal policy and a single system of macroeconomic and macro-financial regulation.

Conclusions

The debt policy should include both strategies and tactics. The debt strategies should specify goals, objectives and methods of their achieving in the long term. The strategy should define the threshold and optimal size of debt, the debt structure, loan tools with the restrictions of value, terms and specification of currency, and trends. The strategy should also evaluate effectiveness of the use of the borrowed funds. The debt strategy should be based on a new generation of fiscal rules that limit the size of debt and deficit, depending on the stage of the economic cycle, providing the effect of automatic stabilizers and allowing some flexibility in application of countercyclical fiscal policy to counter significant downturns in the economy.

The debt strategy should be approved at the legislative level, which will reduce the possibility of executive power to change the volume and structure of the borrowings depending on operational requirements for covering budget expenditures, and will ensure precise performance of the tasks for current and next governments in future periods. In order to achieve short-term goals it is necessary to clearly outline the objectives of the debt tactics, the mechanism of its implementation, the forms, methods and tools to be adapted to the needs of fiscal policy. The debt tactic tasks should be developed in the context of implementation of debt strategy objectives, consistent with the task of fiscal and monetary, and credit policy in the short term.

The development and implementation of the effective fiscal, debt, monetary and credit policy requires precise action coordination, especially that of the Ministry of Finance of Ukraine and the National Bank of Ukraine. That coordination should be made by the special Council (Commission) consisting of the representatives of interested Ministries and Agencies under the Cabinet of Ministers of Ukraine. In this

regard, it is proposed that the Cabinet of Ministers of Ukraine develop and approve the only document, i.e. "Principles of Fiscal, Debt, and Monetary and Credit Policy," where all provisions should be mutually agreed and coordinated regarding actions and time dimensions. The coordination should include all phases of development and implementation of fiscal, debt, and monetary and credit policy along with improvement of financial market infrastructure, development of the secondary market for government securities, information provision, and mainly – clarity and transparency in the actions of all concerned institutions on the financial market.

The adoption of the "Strategic Plan of the Ministry of Finance of Ukraine for 2015 budget year and two budget periods following the planned (2016-2017)" and "Basic Principles of Monetary Policy for 2016-2020 " should be positively assessed, as far as these documents determine fiscal priorities and monetary policy for 2017 and 2020 respectively. However, the coordination of actions should be improved on the use of government securities as fiscal and monetary tools that respectively will increase the efficiency of public debt management. The effective coordination of fiscal, debt, and monetary and credit policy in Ukraine needs clear and transparent European fiscal and monetary rules on which fiscal, debt and monetary and credit strategy should be based. A comprehensive approach to the definition of fiscal, debt, and monetary and credit policy, should be based on the principle of tools and mechanisms complementarity and take into account the EU practices. Only this approach will ensure the effectiveness of macro-financial adjustment to provide a sustainable economic development.

For Ukraine, the optimal ratio of public debt to GDP should be lower than that for advanced economies because of high risks, a significant proportion of foreign currency debt, lower efficiency of the public sector, and insufficient development of the financial market and institutional environment. We propose to legislate the maximum size of the public debt of Ukraine, under normal economic conditions, of 35% - 40% of GDP. The debt strategy should define the optimal structure of government borrowings. Gradually the debt policy of Ukraine should be focused on foreign debt reduction that now prevails in the structure of public debt, and also on the increase of borrowing on the domestic market. Fundamentally, attracting foreign loans is not conducive to the development of the full-fledged domestic financial market, because under low institutional environment, foreign resources are not always used with maximum efficiency. Moreover, if in the short run, the debt servicing costs are reduced (because of lower interest rates on foreign loans compared to internal), in the long run, these positive effects offset because of the increased economic vulnerability. A large proportion of external debt in the debt structure results in high risks for fiscal stability.

This leads to a considerable vulnerability of national financial system, to external shocks, and dependence on the behaviour of foreign investors. According to the IMF experts, in the countries with emerging markets, the critical share of debt denominated in foreign currencies in the total amount of public debt makes 40.3% (although the median for the countries with emerging markets in the period of 1995-2010 was 56%). Accordingly, the minimum permissible value of the debt share denominated in local currency is 59,7% (Yaroshenko F.O.:2015).

Simulation modelling of currency structure of the government debt portfolio in Ukraine, conducted by Ukrainian financiers A. Fedosov and O. Kolot in 2008, produced the following results: reduction of the sensitivity of debt payments in each of the borrowed currencies to fluctuations of relative exchange rates requires a corresponding increase in the share of commitments in hryvnia up to 53% (Fedosov V., Kolot A.A.: 2008, p.30). Thus, the results of the research indicate that the proportion of domestic currency debt in total public and publicly guaranteed debt of Ukraine may account for 50% - 55%.

Today, the increase of the domestic borrowing share in Ukraine should be done by attracting institutional investors. The banking system resources under the recession should be directed primarily to real economy lending, against the Government's needs. It is just the institutional investors, accumulating small depositors and individuals' funds, who are among the main buyers of government bonds in many countries. The urgent task is to attract passive investors to the market of loans in connection with the development of storage mechanisms for social problems' solution in the area of government finance, in particular, pension provision. The choice of borrowing tools should be grounded by the choice of government credit forms, the use of which will maximally meet the objectives of debt policy. Today, Ukraine should diversify the tools of government borrowings, in particular, to issue various types of bonds, like savings bonds, retail bonds, bonds denominated in several currencies thus attracting different groups

of investors to the market.

Particular weight in the reform of the debt policy is to determine the directions for application of the state borrowed funds. It should be noted, that in Ukraine the efficient use of the debt finance potential is weak. The bulk of borrowed funds by means of loans is used to finance the current budget expenditures. In case of necessary macroeconomic and macro-financial stability, and sustainable development, the attracted funds through loans should be used for specific investment projects, and their use be minimized for financing the current budget spending. Therefore, using the mechanisms and tools of debt policy raises the risks of loan financing for macro-financial stability when it is not substantiated by theoretical studies. Specifically, the debt policy, based on modern concepts of public credit operation, will enable to identify the advantages and disadvantages of debt financing of budget expenditures, to reveal the potential of debt finance, which will transform the public debt from the burden into an asset of the nation.

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State Promotion of Companies' Adaptation to New Challenges and Threats of Export Marketing Activities

IGOR GOLUBII⁴

Basic Results of the Research

Given the new world economic, technical and organizational conditions for civilization development, many countries are redefining the principles of national economic policy. In order to remain competitive in world markets and enhance international competitiveness of domestic enterprises, governments improve the quality of their national markets, build regional and national competitive advantages, and pay greater attention to their socio-economic development. They also actively take advantage of regional integration with neighbouring countries, which leads to increasing attractiveness of their market for foreign and domestic investors, creating relatively stable end markets, and growing interregional trade potential.

Members of the world economic space are reforming, above all, their competitive strategies to support the initiatives and efforts of domestic enterprises to improve their international competitiveness. This especially applies to stimulating small and medium enterprises that seek improving efficiency, innovation and export capacity by streamlining their operations, specialization, implementation of new organizational concepts and forms of cooperation in production and export. In addition, the governments support enterprises through the policies aimed at reducing production costs (labour costs, energy, transport and communications), improving innovative production (targeting infrastructure, education, research, technology and financial policies to the needs of businesses), and export promotion policies.

The aim of stimulating exports is value / physical growth and transformation of non-exporting enterprises into exporting. We propose to measure the goal achievement degree (effectiveness of government programs to stimulate exports) as follows:

$$GI = (T + SUB - E) + (IN + W) \quad (1.1)$$

$$G2 = NEC / EC \cdot [(TO1 / NEC) / (TO2 / EC)] \cdot 100\% \quad (1.2),$$

where

GI is the goal achievement degree of value / physical growth of export;

T is the amount of taxes collected over a definite period due to growth in national exports (both corporate income and personal income tax, including related to export industries, and other national and local taxes and fees);

SUB are corresponding previous or potential payments over a period of social unemployment benefits to workers in export and related industries that are involved in the additional production of export goods and services caused by government export promotion programs;

E is expenditures for conducting public programs to stimulate exports during the period;

IN is income of export and related to it enterprises after tax due to additional export volumes during the period;

W is wage of workers of export and related to it enterprises after tax due to additional export volumes during the period;

G2 is the goal achievement degree of transformation of non- exporting enterprises into exporting;

EC is the number of exporting companies at the beginning of the time period in question;

TO1 is the aggregate turnover of new exporting companies for a certain period of time;

TO2 is the total turnover over time of the companies, exporting at beginning of the period.

⁴ Ph.D., Associate Professor of International Business, Institute of International Relations, Taras Shevchenko National University of Kyiv

Both formulas proposed to measure the goal achievement degree of export stimulation are integrated. They, of course, do not exclude the possibility to evaluate the effectiveness of programs to stimulate exports in absolute physical, value or quantitative criteria, that is, to measure the increase of value / physical amount of export (including using the inflation index to establish comparable cost parameters) or the growing number of exporting enterprises over time due to use of government export promotion programs.

Equation 1.1 gives an idea of the fiscal, social and business implications of export promotion. The fiscal component is measured as the amount of taxes from additional exports and the amount of not paid social unemployment benefits to employees of industries that provide additional export volumes reduced by expenditures for conducting public programs to stimulate exports. The received positive rate and its dynamics is a barometer of the effectiveness and feasibility of using public funds for these purposes. The entrepreneurial component, expressed in additional payroll and additional amounts of enterprise income, affects the level of savings, the level of domestic investment and to achieve industrial effects associated with the growth of economic activity.

It should be noted that, in addition to the above aspects of the effectiveness of government programs to stimulate exports, the first formula takes into account another macroeconomic effect: reorientation of manufacturers to export products with high added value (increasing profitability of the export sector of the national economy). After such export increases the profits of exporting companies appearing while determining the goal achievement degree of export value / physical growth. Considering qualitative structural changes in export makes 1.1 formula most adapted to Ukrainian conditions.

Equation 1.2 allows us to evaluate the dynamics of internationalization of the national economy caused by government interventions over time. A significant positive aspect here is the combination of quantitative and qualitative approaches to measure the effectiveness of export promotion through transformation of non-exporting enterprises in exporting. A quantitative approach is expressed in relation of new exporters to the existing ones at the beginning of the period; and qualitative is in relation of total cost of their produced goods and services for a certain period of time, and in identifying via the second part of the formula the prevailing kind of enterprises (small, medium, large) involved in the internationalization.

To increase practical feasibility of each of the proposed formulas it is important to use the inflation index; take into account different duration (and related to it different turns, taxes, wages, or profits) of new export enterprises' existence in the market during the considered period of time; and consider any significant changes in the world market.

The above objective of export promotion is strategically important. In this context there are two types of macro- and microeconomic tactical tasks respectively.

From the macroeconomic point of view the policy of export promotion can lead to [1, 124]:

a) **internal economic balance**, which is closely linked to employment policy. With speeding up exports and expanding or opening foreign markets there is an opportunity to create the new or guarantee the existing jobs, which is of great importance to the domestic economy with high unemployment rate. Despite the fact that in modern conditions it is almost impossible to achieve domestic economic equilibrium, i.e. full employment, but stimulating exports can at least help to reduce unemployment;

b) **external economic balance**, which is associated with the policy regarding payments. National policy of export promotion helps to build a surplus due to increasing positive or decreasing negative balance of trade. This is true for all countries. Highly developed countries cover the negative balance of capital and services with the positive trade balance. Countries in transition and developing countries, on their part, can import more high-tech equipment and goods produced domestically in insufficient quantities due to structural economy deformation. Thus the balance of payments is provided not by gold reserves, but by trade balance.

In microeconomic plane the government, by using organizational and financial resources, can help economic agents in development of new markets (as well as motivate them to do so) at every stage of decision-making during export activities. There are six stages of export activities, where the (potential) exporter can have difficulties and problems specific to foreign trade activity [2, 58]:

1. **Studying the Market and Operating Conditions There.** In the first phase an exporter has to make a picture of a potentially important foreign market. Of particular importance in this case are consumer tastes, prices, and competitors' supply. Compared to activities in the domestic market, this means expansion of quantitative and qualitative information needs of the enterprise. Quantitative information need growth is

associated with the geographical expansion of business activity, while the quality information need is connected with new content (e.g., dynamics of exchange rates and customs regulations) that was not as important during internal operations [3, 16]. Thus, the first problem for the exporter is the need to handle a large array of statistics, the second is the lack of availability of these materials: sources are abroad and mostly unknown; they are difficult to obtain and process without direct personal involvement in the market, which leads to increased travel expenses; in addition, the quality of the received information is usually difficult to assess. Language problems should be added to the aforementioned.

In summary, we can say that the difficulty of the first phase is increasing costs for obtaining the necessary information about the foreign market compared to operations in the domestic market.

2. Preparation of Export Transactions If basic statistics about the market get positive assessment, it is a necessary to find specific customers. Here, the company usually has no personal contacts compared to the domestic market. The exporter can tie these contacts through participation in an important exhibition at the chosen market. However, participation in the exhibition requires significant preliminary efforts and costs. Also, it does not guarantee the (potential) exporter real success because, for example, linguistic and cultural differences can lead to poor perception of products and services offered by exhibitors to potential customers.

That is, the problem at this stage is the relatively high cost of tying necessary contacts with potential customers.

3. Formation of the Supply Formation of supply for foreign market is much more complicated compared to the domestic market. Thus, the company has to consider the peculiarities of foreign legislative framework to assess the risks specific to the market and continue direct study of the market through personal contacts with potential customers if necessary. All this leads to high costs in the formation of supply. If the (potential) exporters do not receive any orders they must cover their own costs. Small or medium enterprises with limited financial assets are often unwilling to deal with similar risks and avoid the possibility of expanding their activities through foreign markets. Large enterprises certainly have advantages here. However, in case of failure to master the new market they have to cover all costs due through increased prices in the successful markets, which leads to an overall increase in the offer price.

The problem of this stage of exports is that the cost of supply formation either makes it impossible or leads to higher product prices.

4. Financing Orders It should be noted that in today's lending, the terms of credit and its cost in exporting offer are considered to be the most important factors in international competition [4, 142]. For big export contracts and deliveries to countries with poor financial solvency, credit, provided to the client to support implementation of the agreement, becomes particularly important. Favourable financing to cover a significant part of the contract price is the decisive criterion for placing an order.

The difficulty, associated with this stage of exports, is to find customer-friendly opportunities for funding.

5. The Order and its Guarantee Particular difficulties occur in export transactions implementation depending on their objects. At this point, it is necessary to fulfill a number of export formalities first of all (paying duties and taxes and filling export declarations), which becomes an administrative barrier and causes an increase in the company administrative costs. But even more complex problems are unforeseeable risks occurring at this stage of export activity. Among them are [5, 121]:

a) Trading risks Here we are talking about possible government restrictions on imports (general prohibition or targeted boycott), as well as export restrictions (export embargo). They are problematic because it is almost impossible to predict the introduction and content of these tools of public policy.

b) Transportation risks Transportation risks are high, especially in case of shipping by sea damage, loss of the goods, or delay of delivery may occur.

c) Mounting risks If according to the contract the exporter has to provide additional services, e.g. in the form of assembly operations in the importing country, there are risks like political instability, unreliable local supplies, etc.

d) Risks associated with warranty The provision and the amount of warranty are often controversial. Due to remoteness of the target market, as well as differences in legal systems, it is usually difficult for the exporters to clarify the procedures and features of providing/getting warranty. The customers might also try to reduce the price by incomplete payment or refraining from paying the caution money. The elucidation

and practical application of the rights and claims of the exporter is challenging and expensive.

Thus, in execution and guaranteeing of the order the exporter faces various risks that are very difficult to confront alone.

6. **Payment** The last stage is payment of export contract prices by foreign customers. Especially in case of long-term payment obligations increasing in a competitive environment, the exporters face a great danger of default on their claims. This can occur under the influence of economic or political factors [4, 43]. Economic risks include loss of the importer's solvency or his unwillingness to pay. Political risks imply events of the higher order – government limits on payments, bans on conversion and transfer transactions, as well as payment moratoriums, which leads to noncompliance with obligations (freezing them).

In case of payments in foreign currency, the risk of default is surmounted by the foreign exchange risk, which reduces export earnings if devaluation of the currency occurs.

The problem at this stage is in danger of underpayment of the outlined sum payable.

As you can see, the problems and risks that arise during export activities are very diverse and can be only partially overcome by exporters. In many cases this leads to high costs.

This set of export barriers implies some direct effects on national export promotion. They relate to target groups and incentive volumes.

The difficulties and problems occurring in all phases of export deter many non-exporting companies from their first export transaction. And even experienced exporting companies run into many of the above-mentioned problems, which appear minor due to their extensive, at some point can face such high risks that they would rather abandon the contract. For example, political risks in the target country do not decrease with increasing export experience of the company. It is therefore important that measures related to export promotion apply to both beginners and experts in export activities.

It should be noted that the export problems' nature concerns primarily SMEs. This means that they are typically limited in (qualified) human and capital resources, which greatly complicates operations abroad. As for limited (qualified) human resources SMEs lack staff experienced in export business. In addition, small and medium enterprises, due to relatively low export turnover, are unable to attract experts to study various foreign markets, as large enterprises do. And this is not to mention the insufficient capital resources. Usually small equity does not allow the company to ensure high costs of preparing export operations and cover the risks of foreign operations. State export promotion should therefore assist primarily small and medium enterprises.

Regarding the amount of stimulation, then, as the previous analysis shows, problem areas exist at every stage of export transactions. Each can become an obstacle for the company when deciding on the implementation of export transactions. Only when the barriers at all stages are low enough the operation can be carried out in practice. Therefore, effective national export promotion should encompass and take into account all the variety of barriers and aspects. Unilateral intervention targeted at one of the array of problems can not achieve the desired result.

Thus, the national export promotion should be armed with a variety of tools and applications in order to be effective and efficient. Table 1.1 [6, 24] shows what export promotion tools and at which stages of export activities they assist exporting enterprises in overcoming export problems and risks. This volume of proceedings eliminates the side effects of general public intervention measures directly stimulating exports are excluded from the discussion. This is explained by situational specificity of their origin and nature of their formation.

Let us briefly highlight the characteristics of each of the above functional and material export promotion tools:

1. **The information and consultation to ensure export operations** Applications under this tool mainly serve to provide companies with necessary knowledge enabling them to carry out export operations. This can be done through the media (books, brochures, manuals, etc.) or personal advice. In the first case a (potential) exporter receives standardized information, while in the second, individual, therefore, focused and more effective assistance is provided. Contacting is a form of aid that opens the door to information sources. Therefore, it refers specifically to this export promotion tool.

The information and consultation to ensure export operations export promotion tool provides assistance in collecting information and, consequently, belongs to the first phase of export activities.

Table 1.1

Export Promotion Tools According to Their Area of Influence

Stage of export operations	Specific Problems	Export Promotion Tools
Studying the Market and Operating Conditions There	Big expenditures on information needs	Information and consultation software for exports
Preparation of Export Transactions	Difficulty in building contacts	Encouraging exporters to participate in exhibitions and to open new markets
Formation of the Supply	Premium to the offer price	Insurance costs of demand formation
Financing Orders	The need for favourable financing	Preferential loans
The Order and its Guarantee	High risk of the order	
Payment	Uncertainty regarding the full payment of the contract price	Export Insurance

2. **Encouraging exporters to participate in exhibitions and opening markets** This type of action stimulates opening the market. In the classical form in this case, the state encourages participation of domestic enterprises in overseas exhibitions. In addition, other entrepreneurial activities in market research are stimulated. For example, representative trips, which, along with the ability to establish contacts with potential clients offer the opportunity to get acquainted with the conditions of activity in foreign markets.

State promotion of enterprises' activities in this direction appears mainly at the second and, to some extent, the first stages of export activities.

3. **Insurance of supply formation costs** This export promotion tool provides cost predictability in the phase of offer formation (the third stage). Government guarantees may cover costs when the offer proves unsuccessful. Thus, high-cost supply becomes available to small producers. In addition, it allows an exporter to reduce the offer price, as they, with guarantees, can eliminate the risk of settlement prices.

4. **Preferential loans** The trade loans, mostly long-term ones, are gaining more importance in the fight for customers. With the eased by the government loans, including loans for production of the exported products, the exporter may actively use this competitive advantage; moreover, the exporter gets better than the market interest terms for the client.

Lending on favourable market conditions overcomes the problem of the fourth stage of export transactions.

5. **Export Insurance** The fifth stage involves the risk of execution of the order, while the sixth, last, stage of the export transaction involves the danger of outstanding liabilities. In both cases, the exporter does not receive the full contract price. Moreover, it happens to reasons beyond his control. To overcome these problems, state insurance of export transactions is applied.

In the present export promotion system, fulfilling microeconomic tasks (which provides for implementation of state programs within the above tools) leads to automatic execution of tasks to achieve internal and external balance. Government interventions acquire the character which really stimulates export activity of the national economy.

However, given the territorial and historical plane of export promotion definition, its kinds, goals, objectives and implementation mechanisms (tools), we can see that in terms of threats to the economic security of the state due to imbalance of payments or unfavourable dynamics of levels of employment (that might lead to social unrest) in the domestic market in times of global crises the need to quickly control macroeconomic indicators of the state is exacerbated by using the "cheapest" and most intense (according to D.Schmidt) intervention. These interventions include tools and measures that can have selective regarding businesses or industries or general economic nature and pursue the purpose of increasing exports due to artificially improved competitive conditions, changes in trading conditions with using power and/or state financial assets. That is, the direct and indirect subsidising a certain category of entities; government's complete or partial taking over functions of market pricing mechanism with a view to artificial pricing for certain products; policy of deflation and devaluation oriented to equalize the balance of payments; international export promotion mechanisms through conclusion of public contracts and contracts that are not of general nature; other measures include artificial improving competitiveness. They certainly can not be attributed to the export promotion policy. Rather, they substitute real export promotion policy both in scientific and in practical terms. However, they are closely related to protectionist ideology - measures restricting imports. This highly intensive national approach can be called a policy of promoting exports.

Export promotion policy envisages creation of artificial conditions of competitiveness of the entities having a selective nature and funded from public sources. Export promotion generates application of tariff and non-tariff barriers by trading partners and leads to development of protectionism. This affects the global economy and dynamics of global prosperity.

The promotion policy itself is trying to create incentives for export via levelling domestic and foreign market conditions through organizational and social financial means, its tools are aimed at an anonymous user and are activated upon request. Involvement of SMEs to export via export promotion policy strengthens the international competition as well. It is important in the context of globalization as the actions of transnational corporations have led to monopolization or oligopolization of some markets. For domestic companies the governments actually perform functions similar to relations of parent TNC companies and their subsidiaries, thus stimulating recovery of international competition. It helps mainly SMEs to overcome legal, economic and cultural barriers to exports in entering the foreign markets.

Consequently, we can assume that export promotion policy was established by industrialized countries in times of overproduction crises (though at that time it was considered the policy of export stimulation) and lasted in almost pure form till the end of World War II. Using these measures each state was trying to sell as many domestic products by artificial terms of trade, while protecting their own markets from competitors' attempts to do the same with high tariff and non-tariff barriers. After the post-war 'revision' of the international economic structure, most countries concluded that the global market should be liberalized as protectionism does not contribute to welfare on a global scale under the classical theory of trade. So true export promotion policy tools gradually replaced the stimulating ones. Thus, subsidies of any form were almost eliminated, the governments dissociated separated themselves from market pricing, the WTO prohibited deflation and devaluation in order to equalize the balance of payments, agreements took the form of general agreements under the GATT / WTO and OECD.

After World War II, the policy of export promotion in one state or another, in pure form or in combination with elements of their own export promotion was professed by Eastern Block countries, and is now conducted by a lot of developing countries and countries with transitional economies. So naturally, as in times of oversupply, it is faced with the introduction of tariff and non-tariff barriers, anti-dumping procedures by trading partners.

Due to its substituting export promotion policy, scientists stress the protectionist (and the associated with it compensation) character of the export stimulating policy, its negative impact on the growth of global prosperity, and inefficient spending of national public finances.

Of course, some aspects of modern export promotion system are also controversial. Actually, if the functional group of export promotion tools raises no objections, the material tools, including preferential loans and export insurance, require further coordination in international economic and financial organizations. Only in this form they can fully comply with the principles of liberal world trade, declared after the Second World War.

Concessional lending suffers from such drawbacks as subvention aspect; while the state export insurance duplicates some private insurance plans and wastes significant budgetary resources as a result of failing insurance premiums (their insufficient level and differentiation).

Within the framework of the GATT / WTO, the member countries agreed on general prohibition of export subsidies in the form of direct payments to exporters, export premiums, transport and freight benefits, etc. Actually, the only allowed kind of subsidies to be used in foreign economic policy government reduction of interest rates on export credits. Export credits at preferential interest rates are usually provided by the state on a long term basis and for the export of investment goods. Thus, these loans are provided for the supply from industrialized countries to developing countries and countries with economies in transition. In order to win the tender for the supply of investment goods, each highly developed country tries to provide the most favourable conditions for export finance of its producers. This eventually leads to escalation of subsidies and significant use of national budget resources for this purpose. As a result, competitive conditions are levelled out (the compensation effect, mentioned above) and expenditure of public funds is growing. The positive effect of concessional lending, which demonstrates its benefit and necessity, should be taken into account. Access to cheap financial resources for production of investment goods together with the possibility of state credit insurance for providers and buyers allow exporters to reduce the price of export goods. This, in turn, allows importers to countries with limited capital and, most importantly, financial

resources to accelerate the capitalization of their economy on favourable financial terms.

Based on the above, the problem of minimum subsidy threshold for interest rates and differentiation by country was brewing. This was achieved within the Organization for Economic Cooperation and Development (OECD) – the only official universal international economic organization that unites almost all industrialized countries outside the UNO. On July, 22 1978 22 OECD countries (except Iceland and Turkey because they do not have national systems of export financing) signed an Agreement on the basic terms of export credits that are in state support (known more as a ‘Consensus’) [7, 100]. The purpose of the Agreement is the unification of the basic conditions for concessional export credits, including a minimum interest rate, the maximum loan period, the maximum share of payment for the contract provided with the loan funds. After reforming the Consensus in 1994, we can speak about the direction of national systems on preferential export financing to enhance global prosperity and correspondence to liberal principles of international trade.

Export insurance requires much more effort to bring it in such compliance. Application of programs of national export insurance is caused, above all, by the lack of private political risk insurance. Of course, under such circumstances the national (or authorized by the State) insurers should provide integrated covering of foreign economic risks – both political and economic. That is, there is duplication of private insurance plans in the context of insurance against certain economic risks. Therefore, every national system of export incentives should have parity in competitive conditions for public and private export insurance. On the other hand, the state export insurance should be self-sustaining. Namely, the amount of insurance premiums must be balanced with insurance payments (via the appropriate level of insurance premiums, their differentiation, insurers’ own participation in bearing political and economic risks).

Certain unification of export insurance tool was achieved through participation of over 47 national companies on insurance of export credits that operate on public order, in the Berne Union [6, 85]. The Berne Union, founded in 1934, is the first international association in the field of export promotion. It acts as a private law organization based on Swiss law. Permanent Secretariat works in London. The Union is a forum of insurers where they can discuss issues of export insurance, learn the positive experience of other countries, or agree on common approaches and standards of insurance exporters. Some developments under the Berne Union became the basis of the OECD policy.

Export promotion as an integrated national policy began to emerge after World War I. The advanced countries, suffering from numerous overproduction crises, were interested in the growth of their export potential, above all. However, the then export promotion policy tools were significantly different from what was adopted after reviewing the socio-economic structure of the world and its principles within the United Nations’ framework. From the standpoint of the present policy of increasing the physical and / or value amount of national exports in the period between the world wars, it can be called a policy of advancing exports. It was characterized by the widespread use of measures of subsidy nature that created an artificial basis of competitive exports.

After World War II the policy made export promotion tools, creating incentives for businesses to export or increase export volumes. Moreover, the effect of such incentives for individual enterprise is limited in time. Developed countries tended to help domestic enterprises to be competitive in the global market. This policy is carried out through functional and physical tools.

Introduction of self-sufficient national export insurance system and standardization of terms and principles of concessional lending make material tools, as well as functional, encourage, but not limit, competition in the world markets. The important role in this process is played by international organizations, among which it is worth noting the Organization for Economic and Social Development and Berne Union.

The national system of export promotion should be built so as to be transparent, publicly available, and comprehensive, and to provide a broad dialogue of all stakeholders. One of the main objectives of the organization-coordinator of export promotion programs is wide informing local companies about the possibility of using relevant government economic policies.

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Global Labour Market Development: Factors, Trends and Prospects

ROMAN STAKANOV⁵

Abstract: Modern global labour market experiences its infancy. Now, a key factor curbing the possibilities for full-fledged functioning of global labour market (via interaction of total demand and total demand on such labour market) is a restrictive migration policy of both national economies and regional associations. Global economic crisis has unravelled or exacerbated several key trends in international labour migration, including escalating global competition for skilled labour, and particular vulnerability of migrants under conditions of economic disequilibrium. National labour markets are sometimes unable to respond properly to changing global conditions, which manifest themselves in ineffective immigration policy and, as a consequence, inefficient use of labour in global terms. For a long time, the key drivers of economic development have been the absolute increase in labour supply and improved labour productivity. However, these factors have unevenly influenced economic growth in countries with different levels of economic development and structure of their national economies. For majority of G-20 countries, demographics conducive to economic growth is thing of the past, which is deemed to affect adversely the growth of the employment absolute value over the next 50 years. The impact of the global economic crisis still persists as well, manifested in limited compared to pre-crisis level of the relative number of employed in the world. Following a period of high employment rates several developing countries are witnessing unemployment increase as well. Should the trend to greater fall in oil prices persist, it would be possible to improve prospects for employment in the host countries; nevertheless, this alone should not be considered as a key factor in restoring the global labour market.

Keywords: Global labour market • International migration • Migration policy • Qualification mismatch

1 Introduction

Nowadays the global labour market, based on the process of international migration entailing a combination of national and regional labour markets as a whole. Unlike the rest of factor markets, restrictive migration policies in several importing labour countries act as a significant curbing factor for establishing a sustainable global labour market. The global economic crisis that began in 2009 also contributed to suspension of the process of the global labour market integration. Today, the most favourable conditions observed in the segment of highly-skilled labour as the demand for this category of workers is steadily growing and the potential destination countries are unable to meet the future needs of such workers with their resources alone.

A number of factors contribute to the growth of skilled migration. Thus, S. Ouaked (Ouaked, 2002) argues that globalization and transition to knowledge economy have increased the demand for highly-skilled workers in many developed countries, with a significant role played by dynamically growing IT sector in this case. A significant part in accelerating the processes of migration is also attributed to TNCs that provide for movement of workers, which was stressed in particular by J. Beaverstock (Beaverstock, 2005). Given the fact that the pertinence of high technology and related production only increases, migration policy of host countries may be expected to account for this trend while formulating migration policy for highly-skilled workers.

⁵ PhD in Economics; Associated Professor at the Chair of World Economy and International Economic Relations of Institute of International Relations, Taras Shevchenko National University of Kyiv, e-mail: roman.stakanov@gmail.com

We have recently witnessed intensification of global competition for skilled labour due to inter alia reduction in a number of categories of workers in many developed countries, as well as general aging of the population and therefore of the labour force in particular in post-industrial countries. This was one of the determining factors for those countries in implementing their policies on stimulating highly-skilled workers' migration, as the OECD report indicates (OECD, 2001). The apparent upward trend in demand while there is reduction in supply of workers of certain categories and qualifications is an important motivating factor for eliminating barriers to labour migration and expediting the process of establishment of the effective global labour market.

Acceleration of regional economic integration, which took place in the 1990s, also played a significant role in formulating migration policies of developed countries. Regional and global trade regimes have become more important tools in adjusting mobility of skilled workers. Thus, Mode 4 of the WTO GATS includes provisions to facilitate movement of skilled workers from abroad to provide services (S.-E. Khoo, 2014). Regional and global level of regulating international migration is largely determined by internal needs of integration associations, while development of robust regional labour markets that operate without any restrictions, as in case of regional labour markets of EU Member States, is a driver for the establishment of a global labour market.

2 Literature Review

Global labour market is one of the most distorted among all international factor markets (McKenzie, 2012). The global financial crisis highlighted the potential vulnerability of migrants in times of economic turbulence in the destination countries. Therefore, immigration to Ireland from the new EU Member States decreased by 60% in 2009 compared to the previous indicator, while overall data on influx of migrants from the EU to Spain fell by two thirds. The pace of such decline somewhat slowed in 2013-14 when the number of immigrants from the New EU MS was down to about 10,000 (about 16% of total immigration) (O'Connell, 2015). The influx of migrants to the United States fell in almost all categories of legal employment including 50% reduction in issuances of visas for low-skilled seasonal workers (Clemens, 2011). The net outflow of migrants from Mexico amounted only to 0.09% of the population of Mexico in 2010-11, while this figure in 2006-7 totaled 0.53% (Demetrius, 2010). Moreover, there is definitely a reverse process as far as from 2009 to 2014, about 1 million Mexicans left the USA for Mexico (MNSDD, 2015). Those are the very international labour migrants who appear absorbent and the most dynamic element in the labour market, rendering them an extremely useful part of the labour market on the one hand, since they can vary the supply of labour in moments of considerable turmoil in the global economy, while on the other hand rendering this category of workers as utterly vulnerable to economic shocks that may affect the stability of the labour market in general.

National labour markets worldwide often fail to respond in time to changes in the global economy. That has resulted in inefficient use of labour force globally where suitably qualified workers are unable to find work, although some countries lack workers of that qualification, significant part of workers are employed out-of-qualification or perform work they are over-qualified for, while other employees hold positions they lack skills and experience for. 30 to 45% of the world working age population is unemployed, excluded from the workforce or working part-time. The total number of such workers is approximately 850 million in the US, the UK, Germany, Japan, India, Brazil and China (McKinsey Global Institute, 2015a). Effective attraction of this reserve labour force could significantly increase the global GDP as early as in the short term.

Over the past 50 years, two factors have been crucial for the exceptionally rapid economic development: a growing workforce and an increase in average productivity. Increase in labour force has been determined, in turn, by two demographic trends: firstly, rapid population growth reflecting the high birth rate at an early stage and fall in an infant mortality, as well in an increase in life expectancy; secondly, the increasing share of the working age population in the total population. Since mid-1960s to 2014 the annual growth of the number of employed among the G-20 amounted to 1.7%, which led to doubling of the workforce to 2014 and provided for 48% of GDP growth in these countries (McKinsey Global Institute, 2015b). Thus, it is apparent that the global economy depended on the manpower extensive growth for a

long time, relying less on establishing institutions for effective use of global labour potential, especially given the prospects of suspension of the continuing labour force quantitative growth.

The remaining 52% of world growth was achieved due to the quality parameters of productivity growth. Labour productivity increased by 1.8% per year in average for 1964-2014. Increased productivity was determined by several factors, including a change of emphasis from low-productivity agriculture to more productive industrial production and services sector, deepening integration of the world economy. At the same time, productivity growth rates significantly differed between countries and regions. Productivity of Western Europe and the US grew by 1.5 and 1.9% respectively in 1964-2014, with that growth occurring from a relatively high initial base. However, the figure was quite high in East Asia (4.6% in South Korea and 2.8% in Japan), which allowed these countries to close the gap in aggregate productivity with Western European countries and the US (McKinsey Global Institute, 2015b).

Differences in productivity growth among developing countries were considerably higher. Thus, if the figure was 5.7% for China, it totaled less than 1% for Mexico and Saudi Arabia, but generally the gap in productivity between developing and developed countries remains rather high and amounts to five times (McKinsey Global Institute, 2015b). However, given the downward trend of growth rate of China's economy, while with a trend to demographic restrictions in place, we can expect not only further cooling of Chinese economy, but also gradual transformation of China into a net importer of labour in the medium term.

A favourable demographic profile that boosted the global GDP has come to an end, and demographic trends have turned absolutely unfavorable for a number of developed countries, population growth in G-20 countries declined, the age structure of population underwent adjustments. According to (McKinsey Global Institute, 2015a), average increase in employment absolute value will decrease over the next 50 years to average 0.3% per year, which is five times less than the incremental value in 1964-2014 (McKinsey Global Institute, 2015b). Such a sharp reduction in demographic accelerator reinforces the need for more efficient use of the existing world employment potential.

3 Basic Results of the Research

Along with long-term trends in the global labour market today challenges of global economic crisis still persist. Economic weakness goes hand-in-hand with continuously weak labour markets. After suspending positive dynamics to improve the relative number of employed in the world upon the occurrence of the global crisis in 2007-9, the global economy and labour market has not reached the figures of pre-crisis level dynamics. To this end, the global employment shall worsen in 2016-19. In 2015 there were about 204 million unemployed in the world exceeding the pre-crisis rate by 34 million people. From 2016 the amount of unemployed will increase by 8 million annually. According to the ILO estimates, by 2019, more than 212 million people in total will be out of work. Taking into account the new workers expected to enter the global labour market in 2016-19, 280 million of new jobs have to be created by the end of that period in order to reach the pre-crisis level of global employment. Moreover, long-run trends indicate further declines, with labour force participation rates falling significantly below 63 per cent of the global working-age population by 2030. The young people, particularly young women, manifest the greatest susceptibility to unemployment. About 74 million of young men and women under 24 were jobless in 2014. Youth unemployment is almost three times higher than average unemployment rates in the world (ILO, 2015). These problems existed before the crisis, but after 2008 they have exacerbated and assumed worldwide proportions.

Some developed economies of the world demonstrate a recovery in labour market conditions. However, given the significant differences in the economic situation in various countries of this group, we may not argue that this trend is common to all post-industrial countries. The unemployment rate is falling, sometimes reaching pre-crisis indicators in Japan, the US and certain European countries. Though unemployment rate is reducing in Southern Europe, it still remains at very high rates (ILO, 2015). Particularly high unemployment rates remain in Spain and Greece, which, given the role of these countries in the migration structure of the EU, act as an additional destabilizing factor in the region.

Instead, after a period of high employment rates the unemployment started to rise in several developing countries. In particular, the number of unemployed in Latin America, the Caribbean, China, the

Russian Federation and a number of Arab countries has increased. Moreover, the situation in the Horn of Sub-Saharan Africa has not substantially improved either, despite better figures of economic growth compared to the previous period in these countries. Underemployment and informal employment in most of these countries is going to remain high over the next five years (ILO, 2015). On the one hand, this situation correlates with overall cooling of emerging market economies; on the other hand, there are prerequisites for changing migration dynamics and structure already in the medium term.

Should the trend to drastically falling oil prices persist, it would be possible to improve the employment prospects of importing countries. However, it may not be treated as a key factor in restoring global labour market, especially considering the fact that the decline in oil prices may also adversely affect the prospects of the labour market in key countries exporting this type of goods. In response to the above factors, improving employment in sectors of developing countries and dynamic economies sensitive to economic cycles virtually does not occur. According to forecasts, the level of sensitive employment will remain generally constant at 45% of total employment in 2016-17, which differs significantly from pre-crisis trends, when employment in this segment of the labour market grew rapidly. The number of workers of sensitive employment sector grew by 27 million workers in 2012-14 and accounted to 1.44 billion workers in the world as of 2015. Given that, the labour markets of Sub-Saharan Africa and South Asia accounted for over half of the world average absolute sensitive employment rate, with the sensitive employment sector covering 75% of the labour market within those regions (ILO, 2015). Such situation will maintain the option for the fastest possible development of regional labour markets in these regions provided there is effective migration and macroeconomic management. However, if existing economic dynamics persists the preconditions for further growth in income inequality and increased incentives for economic migration will gain both intra-regional and intercontinental momentum on the South-North vector.

Faster pace of global economic recovery and improvement in the labour market is mostly hindered by further growing disparity in income between countries and regions. 10% of the richest countries account for 30-40% of total income in average, while 10% of the poorest - only 2%. The situation of specific developed economies, where unevenness of the income distribution was traditionally lower than in developing countries, started to deteriorate sharply after the global crisis and the ratio of incomes in these countries drew near that of emerging markets; in turn indices of uneven income distribution of developing countries and emerging markets remain high and a post-crisis situation does not tend to prompt income levelling (ILO, 2015). Open access of workers and employers to the global labour market, lack of information, communication, tax and other regulatory barriers would contribute to achieving the overall goal of income levelling between regions and countries, as well as to optimizing the use of the global workforce.

Absolute global employment rate grew by 1.7% in the period from 1991 to 2007, but following the onset of the global crisis it dropped to 1.2% per year (for the period of 2007-15). About 5.9% of the global workforce (204 mln workers) were unemployed in 2015. However, this figure differed significantly depending on the region and specific country (Table 1).

Table 1 shows that global trends do not predict post-crisis reduction of unemployment. A pivotal role in this case is played by certain key EU countries being major importers of labour in the global market, such as Italy, France, Spain and so on. Eurozone unemployment rate overall amounted to 11.5% in 2014 (IMF, 2015). Unemployment rates in the Middle East and the Maghreb countries are consistently high with no tendency to significant reduction. East and Southeast Asia demonstrate traditionally low unemployment rates tending to further gradual reduction. Unemployment rates are moderate in Sub-Saharan Africa region, except for the key economy of the region, Republic of South Africa, where the figure climbed to 25% in 2015. However, we can assume that the data on the Africa region may be underestimated as a result of shortcomings of employment statistics in the region.

Unemployment decreased in several major countries, including the US, Germany and Indonesia compared to the crisis period. In 2014 after a limited post-crisis recovery of the labour market average rate of unemployment among G-20 countries totalled 4.8%, which was 0.7% less than average according to the IMF (IMF, 2015). However, the ILO report for 2015 demonstrated even higher level of unemployment - 5.6% both in 2014 and 2015. This primarily was contingent on low official unemployment rates in countries like China and India. However, it is also worth noting that 55 million jobs have been created in G-20

countries since the early period of the global economic crisis. The role of the labour markets of China and India is a key in determining the trends of the global labour market, because 40% of the global workforce indicator (3.25 billion workers in 2014) falls on these two countries. If you take into account analytical unemployment rate calculations of China and India, then in contrast to official statistics of these countries the unemployment rate in China increased from 6.1% in 2010 to 6.6% in 2013, while India demonstrated the rate growth from 7.9 to 9.1% for the same period (IMF, 2015). Considering the scale of emigration as well as untapped emigration capacity, especially that of India, development of full free movement of labour would balance the level of unemployment in these countries.

Table 1

Unemployment Trends in the World, % (* - estimated)

Country/Region	2007	2015	2017*
World, in total	5.5	5.9	5.9
Developed countries and the EU MS	5.8	7.5	7.1
Canada	6.0	6.7	6.5
Japan	3.9	3.6	3.7
USA	4.7	5.9	5.2
France	8.0	10.0	9.9
Germany	8.6	4.7	5.0
Italy	6.1	12.6	12.3
United Kingdom	5.4	5.9	5.5
Central, Southeastern Europe and CIS	8.2	7.8	7.8
Middle East	10.2	11.0	10.8
North Africa	11.4	12.5	12.5
Sub-Saharan Africa	7.8	7.7	7.7
Latin America and the Caribbean	6.9	6.8	6.8
East Asia	3.8	4.8	4.9
South-East Asia and the Pacific	5.5	4.3	4.2
South Asia	4.0	3.9	4.0

Source: International Labour Organization, 2015 http://www.ilo.org/wcmsp5/groups/public/---dgreports/-dcomm/---publ/documents/publication/wcms_337069.pdf.

The origin and development of the regional EU labour market is essential for the establishment of the global labour market. Evolution of new policies on legal migration is a key priority for the EU. Such policies should contribute to the lack of specific qualifications of workers, and the mismatch of supply and demand of certain qualifications in the EU market as well as attract talents. Much attention in the context of the new EU migration policy should be given to reform the Blue Card aimed at attracting highly-skilled workers. Policy on Labour Migration in the EU falls within the scope of shared competence of the EU and its Member States. The terms and conditions of admission of non-EU workers as well as their rights are determined at the Union level, however how much labour may be imported and their work status in the host country is set at the national level. 8 directives were adopted at the supranational level, including four governing rules of admission to the employment of migrants, including highly-skilled workers (European Commission, 2014). Despite the high level of integration within the EU as the regional association, including ensuring free movement of people, in particular with a view to be employed within the EU, the Union still lacks coherent migration policy for workers from third countries. As in the case of the global trend framework, the Member States have achieved their greatest success of integrating the requirements for migrant workers mainly in relation to highly-skilled workers' admission.

EU labour market remains largely regulated at the national level, which today suggests existence of several EU labour markets, which, among other things, reflect different states of economic development and social security systems in the EU. EU Member States have traditionally preferred migration policy aimed at meeting the demand for labour, meaning that the worker may be admitted into the country only if he or she has found a job in another EU Member State, as evidenced by the existing contract of employment. This rule has several exceptions, including establishment of favourable conditions for recent foreign

entrants within the EU and specific requirements for highly-skilled labour. Considering that the global labor market is only at the stage of its development, demand-oriented migration system hinders effective contacts between employers and workers exacerbating the problem of mismatch of qualifications. As a result, these migration systems fail to respond in time to the lack of skilled workers at the local level. Existing migration systems in the EU normally have quantitative quotas for highly-skilled workers relying on the admission criteria while managing migration flows of this category of workers, which significantly distinguishes migration approach of the EU from the migration policy of Canada, Australia or New Zealand (European Commission, 2014). Transition to the scoring system when importing migrant workers at least highly-skilled workers should be more responding to the interests of the global labour market.

Today we may argue about the trend for decrease in demand for the average skill level labour. At the same time, the demand for low-skilled and highly-skilled workers is growing. As a result, relatively educated workers who previously had to use their knowledge and skills while working are forced to compete with low-skilled workers for jobs that do not require their acquired skills. Such changes in employment structure also contribute to deepening uneven income distribution over the past two decades. The global economy has failed to recover adequately after the crisis for the number of created jobs designed to be sufficient to close the gap of employment that stemmed from the crisis. To this and as of 2014 the world had 61 million jobs less than it might have provided the pre-crisis trends persisted, while in case of maintaining the existing pace of job creation, the employment gap will increase to 82 million in 2019 (ILO, 2015).

Nowadays, the issue of mismatch of qualifications is at the center of scientific debate and the governments of host countries put more focus on it. Such mismatches of qualification and skill gaps trigger inefficient use of the available workforce negatively affecting labour productivity in general (World Economic Forum, 2014). Different categories of mismatch of qualifications may be found in Table 2.

Table 2

Types of Qualification Mismatches in the Labour Market

Category	Interpretation
<i>Skills deficit</i>	Demand for a certain type of skills exceeds their supply upon the equilibrium wage
<i>Qualification mismatch</i>	Level and / or scope of qualifications are other than those required for the proper performance of work tasks
<i>Under-/over-qualified/educated worker</i>	Educational or qualification level of a worker is higher or lower than that required for the proper performance of work tasks
<i>Skills gap</i>	Type or level of skills differs from that required for the proper performance of work duties
<i>Excessive or insufficient skills</i>	Level of skills is higher or lower than that required for the proper performance of work tasks

Source: McKinsey Global Institute, 2015 https://samaschool.s3.amazonaws.com/online/Reports/MGI%20Online%20talent_Full%20report_June%202015.pdf.

Despite the significant increase in unemployment in many countries caused by the global crisis, employers still have trouble finding workers of the required qualification level. Such being the case, the majority of problems in finding candidates with the necessary skills is attributed to the inability or unwillingness of employers to offer competitive working conditions, to poor recruitment and training policies, as well as to geographical remoteness between a worker and an employer. Mismatch of qualifications affects workers at different stages of their employment history. Employment problems at dynamic labour markets may occur not only when future employees complete training and join the labour force, but also every time they change jobs or enter the market after a long period of unemployment. Qualification mismatch may also apply to employees who did not increase their level of qualification and improve their knowledge while working at their positions (World Economic Forum, 2014). The need to introduce more sophisticated accounting mechanism for professionals as well as the option for employers to select workers best matching their needs, should encourage the development of new headhunting technology, including online job search platforms, as well as greater integration of migration policies along with the possibilities of the global labour market.

4 Conclusions

Extensive increase in the number of labour force along with an increase in productivity had played a major role in the growth of world GDP for a long time. Today there is a significant amount of idle labour in the world, untapped in a proper way due to restrictive migration policies and still immature global labour market. In addition, given the medium- and long-term demographic trends in G-20 countries, the host countries should pay greater attention to overcoming problems of mismatch of qualifications on national markets.

The labour market key trend in the largest economies of the world over the following decades is a growing demand and, as a result, competitive struggle for highly-skilled workers. It is this segment of the labour market that may expect preconditions for the emergence of a robust global labour market. New migration approaches of the EU that remains the most successful example of regional integration of national labour markets today, also confirm that developed countries of world seek and attract talented workers and young professionals to the economies of their countries in a consistent manner.

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Regional Focus on International Trade Flows

PETRO YAREMOVYCH⁶

Abstract: Modern processes of transformation of international trade flows are an influential material part of the development of regional infrastructure of neighbouring countries. They have acquired particular relevance during the EU enlargement and introduction of exogenous mechanisms of transformation relations, especially in terms of implementation of the Agreement on Partnership and Cooperation "Ukraine-EU" and Agreement on "Ukraine-EU" Free Trade. Transformation of international trade flows in regional infrastructure development in international economic relations involves the use of complex economic, organizational, and legal instruments.

Keywords: Regional focus • Transformation of international trade flows • Cross-border infrastructure development • International trade infrastructure • European integration • Cross-border economic cooperation • International trade flows

Timeliness and problem statement

Transformation of international trade flows is an objective phenomenon in the development of modern regional infrastructure of neighbouring countries. Erratic changes in world markets and consequent rapid changes in prices of commodities moved through international transport corridors need a balanced public policy of neighbouring countries in terms of development and implementation of effective tools to facilitate transformation of international trade flows.

Providing the intensive movement of international trade flows through the terrains of our country by development of infrastructure projects, including international commercial logistics facilities can become one of these tools. Advanced infrastructure provides an additional incentive for cross-border cooperation and the possibility of direct commodity flows through an extensive network of international transport corridors

In this connection, the European Union is an extremely important partner for Ukraine because of geographical proximity, close economic and political ties. This has a particularly significant impact on transformation of international trade flows in the development of regional infrastructure.

The purpose of the article is to substantiate the regional focus of transformation of international trade flows, which is an essential element of European integration processes.

Analysis of Recent Research and Publications

The scientific literature reviews the processes of transformation of international trade flows, and their dependence on development of regional infrastructure of neighbouring countries. Much attention is paid to transformation of international trade flows, efficiency of traffic network of international transport corridors, problems of cross-border cooperation, and creation of cross-border infrastructure, including international commercial logistics facilities. These problems are considered by Ukrainian economists Andriychuk V.G., Budkin V.S., Burakivskiy I.V., Verhun V.A., Zhurba I.E., Lukyanenko D.G., Puzanov I.I., Rybchuk A.V., Rummyantsev A.P., Shnyrkov O.I., Filipenko A.S., Hmara M.P. and others.

Despite the available significant research on the issues of transformation of international trade flows, it is necessary to consider new methodological tools for assessment of changes in the structure of foreign

⁶ PhD in Economics, Associated Professor at the Chair of International Economic Management of Kyiv Institute of Economic Management.

trade and their correlation with the intensity of structural changes in the infrastructure of international trade flows. The present stage of development of international economic relations is significantly impacted by growing monopolization of the economy, emergence of so-called closed markets, where agreements concluded between the limited number of entities at the regional level have substantial importance. This has led to a study of the regional focus of transformation of international trade flows.

Presenting the Main Material

Among the research areas of the modern stage in the evolution of the world community social production, the transformation processes of international trade flows occupy a leading position. They certainly include the formation of globalization conditions, quality improvements, and diversification of the structure of world commodity markets. Now, under the influence of globalization there are significant changes in the conditions of establishment, operation and redistribution of global commodity markets and redirecting international trade flows in the worldwide economic space [1].

It is obvious that the current state of the domestic economy, foreign trade, and integration processes in Ukraine do not promote the goal of European integration. The main problems of Ukraine's low competitiveness in the geo-economic space worth noting are significant corruption of officials at all levels of decision-making, poor governance, lack of practical actions in promoting transformation of international trade flows, and lack of opportunities for low-cost sources of foreign investment.

The reluctance of foreign investors to invest in the infrastructure of this country is of great importance today. As a result global transport and logistics companies direct their international trade flows to bypass Ukraine despite the observed steady global trend of improving transportation technology. It is related to traffic concentration and growth of container traffic in intermodal transport corridors, which should become the basis of the XXI century integrated global transportation network whose creation and operation are among the main tasks of the Eurasian policy of cross-border cooperation.

The inclusion of Ukraine in the globalization of the world economy is characterized by restructuring the world economy, shifts in the balance of its economic centres, the growing role of regional economies, and development of new technologies. For the national economy, this restructuring, on the one hand, creates new opportunities in the development of foreign economic integration and expanding its position in the global commodity markets. On the other hand, it will strengthen the requirements for its competitiveness and capacity for innovation and attracting investment. Prospects of demand for infrastructure and transport and logistics services in Ukraine to ensure the efficient movement of cross-border flows of goods can articulate the existing problems. Firstly, this is the lack of European level roads, which does not allow cross-border trade flows to move with maximum speed. Moreover, poor roads and lack of the possibility for drivers to have a timely break during their routes create a traffic hazard. Secondly, shortage of modern international economic logistics facilities and terminals for storing, handling and processing international trade flows at border areas undermine all efforts for cross-border cooperation. Thirdly, legal and regulatory framework for creation of competitive conditions for functioning of national carriers in the international transportation is inadequate. Fourth, there is shortage of qualified personnel in all areas.

The presence of these problems lies in the lack of coordination between all participants in the transport and logistics process. Lack of domestic programs to create jobs contributes to the outflow of skilled workers abroad. It is therefore urgent that specialized government agencies develop a long-term complex strategy for development of infrastructure of cross-border trade flows. It should be realized through three interrelated approaches: government, industrial and regional. Based on the above, the government approach should be a priority in strategy formation; it should be based on the principle of concentration of resources and efforts to solve the key problems of transition to an innovative and socially oriented way towards development of infrastructure in Ukraine to ensure the efficient movement of cross-border trade flow [2].

The increased attention to infrastructure of cross-border trade flows today is due to several reasons. The principal among them are, firstly, the global economic crisis has reduced public funding infrastructure of cross-border trade flows, which is so important for the society. Second, its development is important because it affects the economy as a whole. Thirdly, search for innovative ways to develop production models of new economy formation. Fourth, globalization of the economy around the world. Fifth, the need to involve the private sector in creating new models of economy and financing infrastructure development of

cross-border trade flows. So today we can confidently say that the infrastructure of cross-border commodity flows is a necessary tool of regional development and it provides organic unity and efficient operation of all material flows.

Globalization and the global economic crisis force our government to seek ways of economic development in cooperation with the countries of the world. This is facilitated by the active participation of this country in global cross-border cooperation programs, which creates the opportunity to be active participants in these programs to attract investment in the formation of national infrastructure of cross-border commodity flows. Continuous growth in commodity movement, developing new traffic routes through international transport corridors, improvement of transportation logistics, storage and cargo handling processes, attraction of new logistics, transport, developer companies make these actions of our country important on the path to European integration [3].

The presence of a strong international business logistics facility network allows the system to realize large route transport operation, and through the use of international data processing techniques for managing transnational logistics systems operating in international transport corridors, provide high quality transportation between national and international commercial logistics facilities. Development of international business logistics facilities also accelerates development of innovative economies, causes the rise of innovation, and strengthens the ability of the national companies to compete in the global market [4].

Referring to the problem of forming the structure of the world commodity market we can distinguish the following components. First, to world market includes the countries' national potential for foreign trade focused primarily on realization of capital and consumer goods, which are interesting to partner countries [5].

Secondly, regional components in the global commodity market should be defined. Above all, these are geo-regional commodity markets operating within the integration groups.

Thirdly, in the structure of the global commodity market the crucial role is played by those institutions operating on a mega level. These should include international commodity exchange, international auctions, geo-regional economic groups.

As the priority of world commodity market development, one should note forming geo-regional economic groups. Signing of the Agreement on Trans-Pacific Partnership (TPP) in 2015 by representatives of 12 countries of the Pacific coast - the USA, Japan, Australia, Brunei, Vietnam, Canada, Malaysia, Mexico, New Zealand, Peru, Singapore and Chile - may be the latest example of this. In our view, this is one of the world's largest free trade zones, whose members produce about 40% of world GDP and control the third of the world trade. Under the Agreement more than 18,000 tariffs on American products is cancelled, duties on most goods are eliminated or reduced, and mutual recognition of many regulatory decisions is imposed. Plaza provisions, restricting the access of Japanese products in the North American market, will also be cancelled. Canada and Japan agreed to open their markets for US dairy products and New Zealand received advantages at the US dairy market. Agreement on unification of sanitary and phyto-sanitary rules, common policy in the field of intellectual property, government procurement, and competition policy was achieved [8].

The TPP Agreement has caused a variety of expert opinions. Some believe that this is a breakthrough for the economy and it is a sign that it is time to change the rules of the WTO, and creation of TPP may be the 'first sign', and soon other parts of the world will have new similar unions. However, we believe that TTP will not create equal and free trade in the region, but establish the US control over the economies of other participating countries. TPP is directed against China, Russia, and BRICS in general. The concern was expressed by the influential Chinese edition Global Times, which wrote that TTP will be used by the participants as a tool of pressure on Beijing, while believing that there was no reason for concern, because, without China such a regional association will have only a limited viability.

An important feature of the global commodity market is the increasing influence of monetary and financial factors that intensified by floating exchange rates. The main tools of monetary policy conducted on world commodity markets is devaluation and revaluation of foreign exchange rates. Sudden changes in exchange rates in some cases generate very significant transformation of international trade and changes in trade between individual states. Especially frequent and significant changes occur in the period immediately preceding the fall of any currencies of major developed countries. The sharp increase in demand may lead to changes in world commodity markets and to higher product prices in particular [6].

Some governments, given the important role of the currency factor in the development of modern markets, are trying to influence them operating with exchange rates. However, the effectiveness of these measures is rather doubtful, and their end result is only the further strengthened anarchy in monetary systems of these countries. This growing uncertainty already prevailing in the currency markets, particularly affects long term foreign trade transactions. Therefore, additional obstacles for specialization and co-production on the international scale, and development of world commodity markets are created [7].

In modern terms the dynamics and structure of international commodity markets are affected by uncertainty of three factors, namely economic growth rates, new configuration of the world financial system, and global environmental development. Therefore, it is worth noting the following priorities of global commodity markets including their component – cross-border trade flows. First, they are becoming more global by the emergence of new sovereign players who declare their rights to natural resources. At the same time, cross-border trade flows are becoming more complex. Along with the usual products in narrow monobranches a broad range of high technology products and services –so called integrated products of intersectoral cooperation – appear.

Second, developed countries focus on producing high-tech products according to the modern international standards and environmental requirements. In this connection, the following implications of this scenario are possible: a) intensified cross-border commodity exchange in the structure of trade flows; b) increased commodity exchange among the developed countries; c) exchange of complex high quality products and services not only for raw materials, but also for the first processing products.

Thirdly, it is logical to assume that the cost of living labour, especially skilled, will increase. One of the requirements of cross-border partnership consumers will reduced energy and material consumption in order to reduce production costs and improve the competitiveness of products.

Fourth, a new stage of fight for scientific and technical leadership in the world will probably take place. A country that actually turns the potential of knowledge economy in the daily life of the society will become the leader that will be reflected in the structure of cross-border trade flows.

Fifth, at cross-border commodity markets a gradual erasing distinction between military and civil products is expected resulting from use of dual technology and innovation potential integration. This will result in diversification of commodities, accelerated renewal of products, increase of intellectual capacity of the global commodity markets.

Sixth, it is likely to intensify cross-border competition in the use of information, communication, space, bio- and nanotechnology at all stages of production, from design to disposal. Offering innovative products and the degree of intellectualization will play an increasing role in the competition.

Conclusion

Thus, the study of regional problems of directional transformation of international trade flows leads to the following conclusions.

First, the development of infrastructure to ensure the movement of cross-border trade flows should promote integration strategy for the formation of the European Union nodal points intermodal transport. In terms of the free movement of cross-border trade flows within an integrated EU market is reducing the number of domestic terminals and their replacement only international commercial logistics facilities, which means optimizing infrastructure.

Second, simultaneously with the formation of regional distribution centers, large companies producing goods create infrastructural facilities that carry out storage, processing, maintenance, division and supply of their products to cross-border counterparts and to third countries. In this regard, one should note the trend towards cross-border logistics center consolidation, their uniting into international logistic platforms that facilitates the efficient movement of international trade flows.

Third, among the main directions of international commodity market development, the emergence of new sovereign players applying new forms of protectionism is worth noting. At the same time, international commodity markets become more complex, which makes it possible to note the following scenarios of international trade flows: a) intensified exchange of goods within integrated groups; b) increasing exchange of goods among developed countries; c) complex high quality products and services will be exchanged not only for raw materials, but also for traditional products of first processing.

Fourth, the strategic goal of the international commodity market is formation of new large geo-regional economic groups like BRICS and TPP. With all the current difficulties and contradictions these groups declare their readiness to change mutual trade relations, enhance geo-regional liberalization and global development of international trade flows.

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Global Economy and Innovation Process Fragmentation

TATIANA OSTAPENKO⁷

Abstract: In this article different economic categories are defined. These categories foresee development of global markets of goods and technologies. These types of markets are based on globalization and fragmentation processes. Globalization is the main factor of forming world and global economy. Fragmentation is characterized by actions of same persons and foresees execution of nano-economy. Thus, in the face of the present mutual globalization we encounter the shifts in the global economy with the fragmentation of innovation activities of different subjects of international economic relations. This effect occurs at the nano-level or at the level of human economy. Nano-specialization has the opposite direction – the exchange of the results of specialized innovative activities of a person. Interweaving and convergence of globalization and fragmentation define the formation of global economy as creation of the unified highly-humane world society.

Keywords: Globalization • Fragmentation • World economy • Global economy • Global markets • Nano-economy • Baby-economy • International economic policy

Introduction

The world is developing by the symmetry principle, when a phenomenon is connected with the contrary one. Thus, globalization processes are developing parallel to the fragmentation phenomena and actions in the world economy. A well-known definition of globalization testifies that it is the process of submission of all national issues to international norms and standards. The process of fragmentation is the process of breaking up general global norms into such ones, which develop national peculiarities of economies and innovation systems.

The purpose of article is to define the interaction of the global economy into the fragmentation of the innovation processes in the world economy.

Analysis of Recent Research and Publications

It is necessary to emphasize that there are publications and research about the problems of globalization and nano-economy, global economy and distinguishing the innovation process in terms of national innovation systems. Therefore F. Hiech, A. Hamilton, F. List (classical writers of economic literature) and Ukrainian scientists A. Filipenko, G. Klymco, V. Nesterenko devoted their publications to the problems of the theory of international political economy. I. Bochian and I. Myhasiuk devoted their publications to the problems of globalization processes, world markets and world economy forming – O. Kireev; to unification and fragmentation of innovation processes – J. Shumpeter (the author of the development innovation theory) and K. Soloninko; to the problems of nano-economy – K. Arroy, G. Kleiner.

Research Outcomes

I. Bochian and I. Myhasiuk point out that globalization boosts the global economy formation. So the global economy is a historical social process aiming at the increase of correlation between national economies, merging national markets in the united world market.

⁷ PhD, Professor Assistant of National Aviation University, Kiev, Ukraine.

The 'globalization' term is often associated with the 'globalism' term. However, the last term is an ideology and policy based on neoliberal approaches, which oppose others ideologies: communist, social-democracy, anti-globalism. We must point out that globalization is not unification (Americanization) but this is both the condition and the process, and the perspective of human society development, the union of humanity in the whole world. It is necessary to emphasize that the globalization is the process of forming the global economy finally. And the global economy is formed by means of creation of internal, national, international markets, and in the end, the world market, which is the basis for the global economy. We must note that the global economy is only at the stage of forming being influenced by the globalization process.

We can define the peculiarities of the term interpretation: *global economy, world economy, international economy, global market, world market, international market, globalization, integration, trans-nationalization, internationalization and fragmentation*.

Hence, the global economy is associated with the term 'world economy' which is narrower than the global economy as it opens the array of global branches, whereas the global economy except the real sector includes market mechanism (market situation with related infrastructure characteristics). In general, G. Klymko and V. Nesterenko [3, c.470] state that the term 'international economy' unites two categories: firstly, the concept of world economy and secondly, the concept of international economic relations. Subsequent to this, the essence and functionality of international economy demand articulating the concept and analyzing the fore-mentioned categories.

General and specific economic categories are displayed in the modern world economy as a real sector. It is defined by the fact that theoretical and practical importance of opening of tendencies, contradictions, and perspectives defines the system of development of the world economy. Authors emphasize that as the general human social-economic values are the profound basis of the international economy, so first of all, we must define their ones.

Generally human social-economic values which are the acquisitions of civilized development of the whole world are:

- an individual with his/her psychological peculiarities and behavioural characteristics;
- a family and its domestic economy;
- collective economy as manifestation of enterprise of an individual or family;
- a state and its economical policy as a factor of social wealth increase;
- commodity-money relations which unite families, states and their grouping in an indivisible contradictory economical system;
- property which defines the condition of a person or a state in the world.

The further development of the world economy was based on these values.

The process of socializing labour in terms of evolution of economical relations at least has clearly expressed collective organizational character, as it keeps its own primary impulse – the individual and family labour activity. Practically in any country, there is such an area of economic life where individual and family activities are more effective. In particular, the national economy of Italy is based exactly on small family businesses [4]. The possibilities of autonomy creation and personality freedom are reflected in the objective need of development of individual or family labour of entrepreneurship and the corresponding form of private property. Taking into consideration the factors which define economic behaviour of a person and family (social, legislative, demographic, psychological, communication) pertinently note that an individual and family but not the collective labour were and remain derivatives of the productive activity. Without respect to the general trend to increase the mobility of people's interests, which displays that more often during their own lives people radically change the types of activities and a family keeps the meaning of the whole-civilization value. This trend reflects not the crisis of the family institute, but its quick transformation, transition to the qualitatively new level, and change of social norms, which regulate it.

A collective is a derivative of family methods of production. A family does not include all characteristics of the process of economic reproduction and it must attract the managers to optimization of family business activities and with the procedure of bringing top-managers into the company owners' staff. The economic value with the name "corporatization" which foresees the emission of shares for attraction of free means defines the deviation of family and individual approaches to business activities. With the turnover of shares on stock exchange there happened the deviation from family business traditions and

adding managers and shareholders from external environment.

Except the family the state is a whole-civilization value. The increase of the role of its functions is conditioned by different levels of production socialization, by the scale and complication of social-economic tasks, by the necessity of effective using natural resources and R&D potential, and by the influence of external and internal factors. The government provides the legal basis of the functionality of economy in every country, defines the policy of macro-economic stabilization, elaborates different programs directed to social distribution of resources and incomes.

From the times of the state origin the correlation between the policy and commodity-money mechanisms has been observed. It has a general character and corresponds to history, traditions and culture of certain countries and at the definite stage of development it goes abroad to the level of world economic relations. The commodity production as a sphere of real sector foresees the existence of world economy, but its environment (market) foresees the existence of the world economy.

O. Kireev [2] defines the evolution of world markets when all starts from forming internal markets, is continued by national markets, and then – international markets and, finally, the world market is formed.

So the internal market is a market where everything that is produced is consumed inside the country.

The national market is the part of the internal market which is oriented to foreign consumers and imported productions.

The international market is a totality of national markets.

The world market [2, p.29] is a kind of firm commodity-money relations of the countries that are constructed on international division of labour and other production factors.

It should be noted that the world market, which is considered in the context of the world economy, is the infrastructure of the latter one. When we speak about the world economy we understand two aspects:

1. the real sector of the world economy;
2. the market sector of the world economy.

The global economy is distinguished from the world economy by the quality of ties. So the global economy is universal all-round, full and general. The world economy is unification of different subjects of international economic relations at different levels and in different forms of these ties, the quantitative characteristics correspond to this unification, including universal production, world demand and supply, development of market infrastructure and etc. The global economy foresees that the relations which form it develop on the basis of such conformity to natural law, namely:

a) The dialectical unity of separated economies, which protect their own interests, enter and get certain international economic relations under the influence of development of trends of economic ties internationalization;

b) The inequality of countries' development as the cause-and-effect relation between the increase of concentration, productive monopolization and aggravation of contradictions;

c) Deepening international division of labour is caused by a new stage of science-technical progress. This division of labour is a factor of improving productive forces by the material contents. Also, it is a factor of social labour productivity increase. And by the social form, it is a method of forming international dependence, inequality of rights of different countries;

d) The main subjects in a system of the world economic ties are TNC and TNB, but the importance of small and middle businesses in international economic relations increases;

e) The effort of state influence on the world economy ties;

f) The effort of subjective factor implementation in the global economic linkages, when destinies of many-sided subjects of international economic reaction depend on human economic behaviour.

The global economy is the economy, whose quantitative indicators turn into qualitative on the basis of the fore-mentioned conformities to natural law.

It should be noted that regulations of international political economy correspond to the global economy forming. The necessity of elaboration of the political and economic concept of modern civilization is caused by the increase of global economy dimensions, especially of its financial sector, by diversification of the world economy structure, by complication of the transformation processes and others. The international (global) political economy [6, p.38], as a science formed in 1970s, embraces liberalization and protectionism, the influence of political factors on the processes of economic globalization, functions of international economic organizations, other forms of international economic relations. The international

political economy, as a structural link of generally scientific methodology, relies on:

–Firstly, world-system (mini-system, world-economy, world-empire) is the unit of analysis, which is used in the world-systemic approach. This approach researches all aspects of social relations, instead of the “container” view;

–Secondly, a significant impact on international political economy has been made by different theories of hegemonial stability, the essence of which is the existence of a hegemon leader (a group of leaders) which maintain the liberal world order;

–Thirdly, the international political economy pays great attention to functioning of the "international regimes" – a system of institutions at the global level. This includes the study of economic preconditions of wars and conflicts, problems of international economic cooperation and global governance.

The policy framework of international economic relations includes three elements: 1) the study of the positions of the actors, i.e. corporate players, given their positioning in the global economy on those or other measures of economic policy; 2) the research of policy institutes, formed by the positions of the actors; 3) the analysis of negotiations between the Member States about the contents of the data measures of economic policy with regard to the impact of the actors, who articulated his/her position through the institutions.

Based on the methodological principles of the classical political economy, modern science uses a methodological toolkit of interdisciplinary integration and general scientific methods of Cognition: a systematic approach, evolutionary theory, principles of uncertainty and complementarity range of synergetics, etc. Among the major political and economic problems there is the question of formation of the world (World) of ownership, global economic management, pricing, taxation, etc. The foregoing and related problems are the subject of the international political economy, which is conceptually divided into liberalism, Marxism and realism. These three basic schools reflect the extremely complex, diverse structure of the world economy. On the one hand, such factors as global division of labour cooperation and internationalization, trans-nationalization and globalization cause the formation of a more or less coherent international economic system. On the other hand, factors, such as uneven social-economic development, greater differentiation between countries and regions of the world, the increase in the gap between Center and periphery of the world economy, are directly the opposite direction, breaking its system forming foundations.

Therefore, international (global) political economy, defined by Filipenko A. [6, p. 41], studies material conditions, practice facts, and statutory provisions that characterize the contemporary world and follow the rules and conceptual approaches of economic science. It does not come down to one of the three aforementioned concepts, which have acquired the status of a scientific paradigm, and appears rather as their set, which creates the preconditions for quite an adequate political and economic analysis of the global economic environment.

The focus is on the fore-mentioned concepts in the study of the international political economy.

The liberal current in the international political economy traditionally stands for free trade and free markets, based on the neo-classical paradigm. The key is the concept about the need to achieve the fundamental harmony of interests between states as a result of free exchange between goods, services and factors of production, deepening of cooperation. The cornerstone of liberalism is to focus on the behavior of individuals, businesses and states.

According to the architects of liberalism, recipient states obtain the maximum benefit from free trade, and do not create any economic justification for international conflicts and wars. The liberal concept also envisages the need for management of international economic relations of the state by setting the respective trade regimes, rules, norms and standards to ensure that the exchange between the countries, preventing unfair competition, etc.

Friedrich August von Hayek (1899-1992) is a Nobel Laureate, leader of the New Austrian direction in the economic science, a critic of socialism and Keynesianism, the successor of the traditions of classical liberalism, one of the leading social thinkers of the twentieth century. As a theorist of individualism he stated [7, p. 28] that "Although the theory of individualism is able to make a certain contribution to the technique of building an appropriate legal framework and the improvement of institutions that have formed spontaneously, of course, it pays special attention to that part of our order, which can or must be a conscious product of the human mind, is only the tiny part of all efforts of society." In other words, the scholar notes

that the state should be only a part of what is considered to be the community, and the majority has to depend on the activity of a single individual. As an individual, in turn, should understand the need for subordination to customs and conventionalities, which are the basis of the existence of the state.

Friedrich Hayek suggested [7, p. 29] that "true individualism approves the value of family and the other joint efforts of a small community or group. In addition, it is subject to the rules, not only when a person understands their validity, but as long as he/she does not find substantial arguments against them, is the more important condition of gradual evolution and improvement of the norms of social interaction".

It should be noted that F. Hayek determines the importance of the conventions and traditions that made human behaviour largely predictable and in this society, violence can be minimized. The traditions of different nations' intellectual activities confirm the practice of the language of these nations. For example, the German language is structured, logical and kept. This practice has led to the fact that the Germans were characterized as extreme Mavericks, although they are usually considered very obedient. This German individualism has identified such geniuses of philosophy and art as Goethe and Wilhelm von Humboldt.

The Marxian approach in the modern international political economy examines two key provisions: the labour market and employment under the conditions of the growing internationalization of capital, on the one hand, and the problems of poverty and bad development of third world countries – on the other hand. The relentless growth of multinational corporations and globally integrated financial markets intensifies contradictions between the real and financial sectors of the world economy, significantly weakens the economic and political power of the working class, leading to deep social stratification on a global scale. All this gives rise to the increase of political conflicts both at the individual level and at the level of groups, classes and countries on the whole. Marxism sees the following main causes of deterioration in the global economic environment. First, the trend of reducing the profit intensifies capitalist competition and causes a decrease in the level of wages. Secondly, capitalism is characterized by uneven development, when the growth of wealth of the individual centres at the expense of others. Thirdly, the capitalist over-manufacturing and under-consumption accumulates distorting the business cycle that undermines social stability on the inevitably generated internal and international conflicts, and even wars [6, p. 39].

Realism (the economic nationalism) is rooted in the Antique times and modern era. Speaking of the direction, it operates on such concepts as mercantilism, neo-mercantilism, State-based theory, unapologetic politics, and economic nationalism. A. Hamilton (United States) and F. Liszt (Germany) were passionate supporters of this policy. They both advocated introduction of protectionist measures in their countries during industrialization.

The essence of the economic nationalism is the formation of a strong state, to which economic development should be subordinated as well. In accordance with a realistic approach, it is assumed that the state is the principal actor in the international political economy. The state has a priority before the market and political forces shape the market relations. In the international economic system there is no single set of rules, the anarchy reigns there, the state is sovereign, and acts at its own discretion as subjects of the highest level, and they are subject to all the other actors that are guided in their actions by the National Union. Therefore, international political economy is primarily due to the rational actions of states in the struggle for power and wealth. The relations of states are dominated by a zero sum game when one wins the others lose more, that inevitably generates conflicts and economic wars.

It should be emphasized that these approaches are not self-contained or self-sufficient. Actually, they are interwoven and use tools with a range of all three concepts, transforming into two political and economic dimensions: internal and State-society.

The study will use the liberal ideas, the ideas of individualism in the economic life in General and in international economic relations in particular.

Based on the above matters, we can cite the wording of such economic category:

International Economy is a combination of open economies combined with the help of international economic relations and processes of internationalization. Internationalization is the process of transformation of national economies in the boundaries of national forms. Of course, the scientific literature says that the international economy is, above all, a theory that is used to study the economics of the interdependent world [5]. In other words, it includes all those categories that are identified within this study.

The world economy is the international economy (the combination of open national economies) of

the real sector, which is formed on the basis of the trans-nationalization processes. Trans-nationalization is a process, a higher degree of internationalization, when combined with the production structure of different countries within the multinational corporations that form the real sector, it is the international economy.

The world economy is the world economy coupled with functioning of world commodity markets and production factors (a combination of the real sector and the market infrastructure) that is created on the basis of the processes of integration. These shared world markets, which include the formation of the common commodity markets and production factors. A model of the world economy is integration created in different regions of the world.

The world economy based on what lies behind the process of globalization. The global economy provides for the unification of all the economic systems and the transition of quantitative indicator impartiality of economic life to quality. The global economy is seen only in connection with the highly humane world community, which must get the comfort of a simple Union of countries.

In this connection we can go to definitions of markets: International, world and global.

International markets, by the interpretation of O. Kireev, are working conditions, a combination of national markets. International markets form the international economy.

World markets are a combination of internal, national and international markets. World markets shape the world economy.

Global markets are unified (integrated) markets, which are the equivalents of common markets, e.g. the European Union, created on the basis of globalization, social and economic relationship that is the main focus of their activities. Global markets shape the global economy.

The modern global economy depends on such factors as innovation, innovation processes and innovation system. The main factor of innovative activities is a development of global market of technologies. It is known that technology is a production factor; it depends on general laws of international movement of production factors and existence of international and global markets. The focus on formation of international markets for production factors, their transition into global markets and further – in the global markets.

Note that the approaches to the interpretation of what is considered a production factor are quite diverse. However, the economic science has formed consensus regarding the definition of the notion of production factors.

Production factors [2, p. 23] are the resources you need to spend to make the product. The following factors are labour and technology (human resources), land and capital (proprietary resources). From the economic theory we know different definitions of production factors. These are definitions of working conditions [2, p. 23]:

- the work is a physical and mental human activity aimed at achieving useful results;
- technology is the scientific method of achieving practical goals, including entrepreneurial skills;
- the land is all that nature has provided the person throughout his/her productive activity (land, minerals, water, air, forests, etc.);
- the capital is an accumulated stock in the manufacturing sector, monetary and commodity forms necessary for creating wealth.

Each of the production factors has its cost. The price of labour is wages, technology licensing or patent payment, land, ground rent, capital-bank interest. The price of a production factor reflects the balance of demand and supply as within individual states and in relations between the countries. The states of the modern world are endowed with specific production factors in varying degree, thus prices will be different.

The most important preconditions for development of international, world and global markets and production factors are the international division of these factors:

The international division of production factors is their concentration, which has developed historically in various countries and that is a prerequisite for the production of certain goods economically more efficient than in other countries [2, p. 26-27].

International separation technologies are the result of different levels of development of scientific and technical progress made in some countries and a significant degree of acts result from differences in the supply of production factors such as labour and capital. This division also includes different provision of the countries' resources of knowledge, that is, the amount of scientific and technical information, which is concentrated in scientific institutions, literature, data banks, etc. American computer technology provides

the United States a leading position in the world computer trade, and the Dutch technology of growing flowers gives the Netherlands the primacy in the global market.

International markets for production factors assume that they are formed on the basis of distribution of data and production factors. So technology, which is concentrated in the leading countries of the world, forms the international technology markets under the influence of demand and supply. The approved innovative technology (which guarantees bringing profit) is included to international technology markets. These can be technologies that have a positive income effect; or the ones you can share with partners, or technological solutions that are at the stage of maturity for the life cycle of the product. Note that the international market is the totality of domestic markets focused on the foreign consumer. Therefore, the latest technology, which is the property of national researchers, remains subject to consideration of the internal environment; technologies that are at the stage of growth are usually not exported to other countries. Thus, the international technology market is a combination of demand and supply and innovative technologies at the mature stage of development, excluding the internal features of the innovation environment.

Global technology markets are a set of national innovation systems in conjunction with international markets. World markets in particular, are determined by technologies in the process of developing within a national innovation system. For inclusion in the world technology markets one should have a national innovation system, which produces technology that affects the course of innovation thought and involves the exchange of the latest information and databases. World technology markets include not only the exchange of innovative technologies, but also the process of birth within a certain innovation system. Despite the inability to incorporate the latest knowledge in international sales, the latest developments are influenced by those terms which are an innovation system in one way or another. On the world markets there are multinationals, which conduct research and implement new technologies and transfer them in the environment of those national markets that are willing to adopt innovation. TNC is a micro-innovative system, which is a major player in global technology markets, they sell "used" (secondary) technology to obtain additional income, and the newest findings, which are the core of self-development to them.

Global technology markets should be combined with a certain idea of highly humane development of the global society based on globalization and fragmentation.

As noted above, the reverse side of globalization is fragmentation. If globalization is a process of unification, then fragmentation involves selection of individual parts of the whole and orientation to separate these parts based on nano-processes. The ultimate goal of globalization is the global economy development with the fragmentation into separate individuals.

Of course, fragmentation can touch the separation of activities of enterprises, regions and entire countries, but these subjects of international economic relations are based and depend on the subjective factor of human economic behavior. It is known that effective management depends on the synergy of actions of individual employees coming into the team. F. Hayek suggests that the group which operates with a separate individual is a principal centre of manifestation of economic behavior. Being alone these accomplishments are not important to a person, but in a team (family, enterprise, industry, public authorities) of human economic behavior it becomes the content, because it affects the profit (as an economic objective) and to improve the quality of life of the individual and the ability to feel happy in a competitive environment. Today the index of happiness of the population of an individual country has become a display of economic and social development of the country. It is known that the happiest country is Bhutan. Here the macro-factors effect the sense of happiness of individual people. But a happy nation is formed through the economic behavior of individuals.

K. Arrow first proposed to use the term "nano-economy" as an indicator of economic development of the person. Today's approaches to nano-economy in this context include the following components: baby-economy, economy (as the economics of human behavior) and, finally, economics of nano-ethnology. For the purposes of this study we use the following logics:

–baby-economy, the first stage of nano-economy, when economic skills are being formed. So the child given fundamental and applied knowledge in high school and university has to acquire the skills how to use this knowledge upon these institutions. This aspect is important in adult life, after all, having knowledge means to be educated, and to know how to use this knowledge is to be wealthy and happy - this thesis is important for the economy of Ukraine because we have the technology, but do not have the

experience of its effective implementation into life. The fragmentation of the innovation process starts with education in the family, continues at school and university, and manifests itself in the application of powering the efforts within a group (family, enterprise, corporation or state);

–the human economy implies that a child with a store of knowledge and skills comes into adult life with the need to earn living, to form his/her family, to affect the economic situation of the group and to develop globalization processes. Economics of the human as the main phase of nano-economy is determined by mature economic behaviour of the individual, it depends on the traditions and stereotypes, which exist regarding this nation. The traditions and customs of the Ukrainian environment affect the formation of certain economic behaviours of individual managers (managers in the broad sense) and implementation of this behaviour in the system of global relations;

–economy of nano-technologies provides the final direction of baby-economics and economics of a person, this is the phase which is responsible for creation of nano-technologies in different areas of life, is the goal of fragmentation of innovative processes within one or another economic system. Nano-technologies are developed and implemented within a particular innovation system and these technologies are high technologies. To produce such technologies means to influence the formation of the global economy.

The fragmentation of innovative processes that each link innovation separates, and specializes in implementing certain stages of the innovation process. Remember that the innovation process includes the following stages: the agglomerated development of fundamental knowledge; development of applied knowledge; production technologies; technology transfer in production; technological production; manufacture of the latest product; sale of new end user; and replacement of the updates for the next innovation. The fragmentation of the innovative processes is determined by what happens to the specialization of these innovation processes on the basis of international division of the production factors such as technology.

Note that certain stages of the innovation process are concentrated in different countries, in different enterprises and institutions, and in the minds of different researchers and engineers. Therefore, the fundamental knowledge, the most expensive phase of the innovation process, is concentrated in those countries that allocate substantial funds for such research. There is a list of countries that have the highest percentage of costs in the field of R & D of GDP. These are Sweden, Japan, the United States and Israel. These studies are concentrated within the specialized research institutions, as well as in the framework of the research centres of transnational corporations. This fragmentation (separation) for basic research allows individual researchers (“scientific individuals”) to create new knowledge that can then be used in the development of innovative technologies.

Applied studies predict that pure science is being applied to improve practical tasks. Applied studies are exercised by mainly enterprises (mostly multinationals). Fragments of applied research are formed by individual engineers and, in addition, this applied knowledge should lead to profit, and then this knowledge becomes an innovation. And because of that Schumpeter [8] suggests recognizing such technology as innovation that brings profit to the enterprise. Developers of fundamental knowledge get the idea of improving the scientific direction, unlike the developer of applied technology, which offers an approach for improving a particular task or another technique in the field of active human activity below the applied knowledge, is transformed into technology, when the subject is used in the manufacturing process.

Therefore, the fundamental knowledge invented in the United States is converted to an idea in Israel, is introduced in production in India, and the finished product is implemented in Ukraine. This is an example of fragmentation of the innovation process, which separates these countries and researchers, and brings them together so that they all carry out the exchange of the results of these activities.

Note that the international division of technology meets the international division of labour. It is well-known that the international division of labour implies dialectic unity of specialization and close cooperation. Accordingly, there is international technological specialization and close cooperation. The international technological specialization is selection of certain stages of the innovation process and their specialization in certain countries and individual researchers. Technological close cooperation is, first of all, sharing the results of innovation activities, concentrated in different countries of the world and based on multinational researchers and engineers.

Conclusions

Thus, in the face of the present mutual globalization we encounter the shifts in the global economy with the fragmentation of innovation activities of different subjects of international economic relations. This effect occurs at the nano-level, the level of the human economy. Nano-specialization has the opposite direction – the exchange of the results of specialized innovative activities of a person. The interweaving and convergence of globalization and fragmentation defines the formation of the global economy as the creation of the unified highly-humane world society.

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Development of International Tourism in Greece

KONSTANTIA DARVIDOU⁸

Abstract: This paper analyzes international tourism development and its role for the Greek economy. It starts with defining international tourism and its types. Review of previous theoretical and empirical research is provided. There is a discussion of historical and modern trends in the tourism sector at the global and national level in Greece. The tourism industry has a disproportionately large influence on the economy of Greece. The inbound tourism was an important driver of its economic recovery and balancing its foreign trade. The government uses a number of instruments to support the industry. Main competitive advantages of Greek tourism industry include climate, seashore, historical and cultural resources, hotel facilities, health system, air transport, and government support. The main weaknesses include business regulation, exchange rate, fuel prices, business management, and macroeconomic vulnerability. The author used econometric models to estimate the influence of education system, transportation infrastructure, health system and costs of starting business on the sector competitiveness. Further, there is an estimation of the short-term effect of tourism sector and macroeconomic indicators on employment growth in air transport, hotels and restaurants, recreational, cultural and sporting activities in Greece. Tourism also helps employment in other sectors, primarily in production of clothes, construction, retail trade, and land transportation. Finally, bilateral tourist flows (case of Greece and Ukraine) are analyzed and possible actions from their development are discussed.

Keywords: Tourism • International tourism • Tourism industry competitiveness • Tourism policy • Economy of Greece

JEL Classification L83 • F14 • Z32

1 Introduction

There is a worldwide trend of the growing role of tourism and other services in the economy. Tourism increases economic, social, and cultural interaction between countries. Rapid growth of tourism in the XX century resulted in creation of a special research area in international economics devoted to this industry. Tourism directly includes or affects a cluster of industries such as hotels, trade, transport, telecommunication, construction, agriculture, consumer goods production, and cultural sector.

International tourism is among the main industries of Greek economy. According to the World Tourist Organization Greece is the 16th most visited country. The importance of tourism has grown since 2009 under the debt crisis because this sector has a great potential for generating income of individuals and government budget revenues, improving the balance of payments, and creating jobs. Therefore, the economic development strategy and anti-crisis reforms in Greece should consider tourism as a top priority sector.

In this paper we aim to consider theory of international tourism, its main trends, and suggest improvements in this sector to help economic recovery in Greece. In Section 2 we provide a review of previous research. In Section 3 we describe main global, European and national trends in international tourism development. In Section 4 we compare advantages and disadvantages of Greece as a destination country. In Section 5 we use regression analysis to find possible ways to improve competitiveness of tourism in Greece. In Section 6 we analyze its role in creating jobs. We conclude by considering development of bilateral tourism links, in particular links with Ukraine.

⁸ TEI of Western Macedonia, Greece. e-mail: darvidou@kastoria.teiko.gr

2 Literature Review

There are various definitions of international tourism provided by researchers and international organizations, e.g. by Hunziker and Krapf (1941) and Igoumenakis, Nikos (2004). We prefer to define it as a movement of individuals beyond the country of permanent residence for a period less than 1 year, which is not connected to receiving income in the destination country. As an economic industry international tourism industry produces a complex product, which includes services of accommodation, restaurants, transport, cultural and entertainment activities, retail trade, insurance, translation, visa, advertising, etc. But we also can treat tourism as a research and economic policy area.

Tourism services can be classified according to several criteria: national identity and direction of movement (domestic tourism, inbound and outbound international tourism), type of organization (mass or individual), time (year-round and seasonal), age (for youth, pensioners or middle-aged persons), income level (luxury, for the middle class or social), etc. At the same time, it can be classified as general and alternative tourism. The latter includes cultural, ecological, religious, nautical, conference, education, sport, extreme, green, winter, gastronomic and other tourism.

Tourism development can be explained by various theories of international trade (absolute and comparative advantage, factor endowment theory, intra-industry trade, overlapping demand, the competitive advantages, life cycle of a product, the technology gap, the technological progress, the stages of economic development etc).

On the other hand, there are special theories and models of tourism demand. The characteristics of tourism demand and supply are: seasonality, impossibility to store and transport, dependence on business cycles, the long payback period of investment, dependence on leisure time and income (Morley 1992), and the need to process large amounts of information prior to selection of a tour (Rosselló, Guiló, and Riera 2005). Every tour has some general and specific consumer characteristics, which can be dependent or independent on length of a travel (Morley 1992). Seasonality of tourism is explained by domination of sun and beach tourism, traditional adjustment of infrastructure for seasonal tourism, social conditions enabling vacations mostly in summer-time, low attention by tourism service providers to extending recreation season (Dritsakis 2008). The tourism demand can be segmented by: travel destination, individual characteristics of tourists, country of origin, host country, type of accommodation and tourism organization (Laesser and Crouch 2006), sensitivity to the unique characteristics of the tour and prices.

Most previous empirical studies use country specific approach (as reported in the meta-research by Song and Li 2008). They use econometric modelling, time series analysis or artificial intellect methods. The most frequently used variables of tourism demand are tourist arrivals, expenditures of tourists, and international tourism receipts. Most frequently used demand factors include tourist income, prices, and exchange rate. Other factors are less popular (demographic factors, foreign direct investment, education, age, unemployment, income inequality (meta-research by Peng, Song, Crouch, and Witt 2014), country image (Stepchenkova and Eales 2011), political instability (Neumayer 2004) etc). A separate research area is analyzing the effect of specific events such as epidemics (Cortés-Jiménez and Blake 2011), political or economic crises. Many researchers provide adjustment for seasonality.

Various models enable to forecast total tourist expenditures (González and Moral 1995), share of a destination country at the tourist markets (Papatheodorou 1999), tour choice by individual tourists (Reece 2003), and expenditures per tourist (Laesser and Crouch 2006). Some studies analyze dependence of income and price elasticity of tourism demand on various factors (source region, destination region, aims of travel, travel distance, time (meta-research by Peng, Song, Crouch, and Witt 2014), distance between competing destination countries (Papatheodorou 1999). Significant difference in the elasticities shows that it is necessary to use different marketing strategies for various segments of tourists.

Despite various previous research publications several issues require additional attention. More attention should be paid to tourism as an element of crisis economy and anti-crisis measures, evaluation of competitive advantages in comparison to other industries and countries, synergy effects of tourism development for the national economy.

3 Main Trends in International Tourism Industry in Greece and Worldwide

Tourism has a long history and existed even in ancient civilizations including the internationalized

Ancient Greek economy. The Byzantine and Renaissance epochs were the time of religious tourism, travels of aristocracy, and travels beyond Europe. Under the industrial revolution technical innovations made travelling cheaper. It was also a time of active building hotels and establishing travel agencies and organizations. Mass tourism epoch started after World War II. It was fostered by political and economic stability, more spare time, transport progress, development of tourism companies, government support, simplification of formalities, and development of supporting financial and insurance services. In the XXI century we observe start of a new epoch of new IT tourism with individualization of tourism services, online-reservation services, and internationalization of more types of tourism service providers.

During the second half of the century international tourism became one of the most fast-growing industries. International tourist arrivals have increased 45 times since 1950. The share of tourism in the world service exports is about one quarter according to the World Trade Organization. Within the world exports tourism takes the 5th place after energy, chemical, food and automobile industries. In many developing economies it is a number one exporting industry. Further prospects for international tourism development are related to economic development, creation of jobs, quality of infrastructure, government support, development of green economy and protecting environment, changes in lifestyle and consumption structure worldwide, and business climate improvement.

Europe has the biggest share of international tourism revenues (42% in 2013) because of the quantity and variety of tourism attractions. Tourism supports European identity and helps to improve the image of Europe, spread its values and its development model.

In Greece international tourism receipts are 45% of service exports (UNWTO 2014). According to the Master Card Worldwide rating Athens takes the 32nd place among the tourist cities. Greece is the 8th country in Europe by international tourism receipts and 16th country in the world by tourist arrivals. According to SETE (Association of Greek Tourist Enterprises) at the beginning of the XXI century Greek tourism industry accounted for 1.5% world tourist arrivals (which is a dozen times larger than the share of Greece in the world population), 16.6% national GDP, and 20% national employment. Particularly it is the inbound tourism that is the driver of the Greek economy and helped to offset decrease in revenues from domestic tourism. International tourism receipts in Greece in 2014 were 6.5 times larger than expenditures on outbound tourism (Bank of Greece 2014).

At the supranational level the EU assists tourism development by adoption of directives to ensure rights of tourists, construction of pan-European transport networks, protecting natural recreational and cultural resources, financing tourism initiatives with structural funds, etc. Greek Government pays particular attention to the industry. It made efforts for international cooperation, extending tourism season, VAT cuts for hotels, visa formalities' simplification, stimulating national and foreign investment, PR activities to improve national tourism image, stimulating employment in hotels, deregulation in transport services, and defining legal types of tourism service providers. As a result, for the first time since the crisis year of 2008 development of international tourism helped Greece to achieve 0.6% GDP growth in 2014. And for the first time since 1945 it helped to balance its current account in 2013.

4 Competitive Advantages of the Greek Tourism Industry

We have further analyzed data of the Travel & Tourism Competitiveness Reports (Blanke and Chiesa edition 2013) of the World Economic Forum to find comparative advantages of Greece in tourism sector relatively the rest of the world and its main competitors in the area of sun and beach tourist in particular (Bulgaria, Croatia, Cyprus, Egypt, Italy, Portugal, Spain, and Turkey). These are geographically proximate mostly Mediterranean countries with seashore and similar climate, which are mass tourism countries. The criteria for comparison include policy and regulation, environmental sustainability, security, health and hygiene, prioritization of tourism and travel, air and ground transport infrastructure, tourist and ICT infrastructure, price competitiveness in the tourism sector, affinity for tourism and travel, and human, natural and cultural resources.

We conclude that the main competitive advantages of Greek tourism industry include developed hotel facilities (Greece outperforms other competitors except Cyprus by the number of hotel rooms per capita), healthcare and hygiene (the biggest number of medical staff per capita and quality of Mediterranean diet), natural environment (climate and length of seashore), cultural sites and events (historical places and sports facilities), government support, developed network of air transport, and access to supporting financial

services. All the competitive advantages can be classified as primary (climate, seashore, historical and cultural sites) and secondary (hotel facilities, healthcare, air transport, and government support).

Tourists visiting Greece were motivated mostly by its natural environment and culture. In order to attract the EU tourists it is particularly important that Greece shares single regulatory environment and belongs to the Schengen and euro areas. Particular national tourist infrastructure elements include various archaeological, Byzantine, historical, folklore, art, and scientific museums, historical monuments, theatres, churches and abbeys, conference halls and exhibition centers, beaches, marinas, spa centres, sports facilities, and natural terrain sites.

On the other hand, Greece lags behind by business regulation (tax system and labour market regulation), business practices (innovations in marketing, foreign direct investment penetration in tourism industry, and ICT use), cyclical trends (general economic uncertainty due to crisis and high debt ratio). For some market segments weaknesses include seasonality and visa formalities. Previously Greece also experienced some disadvantages in cost factors (high euro exchange rate and high fuel prices). But economic crisis considerably affected prices. Euro exchange rate has lowered. Decreasing world energy prices can help to increase passenger traffic and tourism exports.

5 Raising Competitiveness and Investment Opportunities for Greek Tourism Industry

We further used the indicators from The Travel & Tourism Competitiveness Reports (Blanke and Chiesa eds. 2009, 2013) in a linear regression analysis. The data for European, Mediterranean and non-European developed economies were used. The dependent variable used as a proxy for competitiveness was the triennial growth of international tourism receipts (2009-2012) from the World Development Indicators (World Bank 2014). Some independent variables were excluded for several reasons: high rank of Greece (almost no further improvement is necessary); low, insignificant or non-robust (a subsample was tested) correlation with the dependent variable; sign of correlation contradicting theoretical assumptions; and multicollinearity.

The results for the 5 remaining factors in 3 models are summarized in Table 1. Therefore, for example, if costs of starting a business decreased by 1 % GNI per capita, then international tourist receipts would grow by 0.59% (see Fig. 1).

Table 1

Estimates for regression analysis of competitiveness of tourism sector			
	Model1	Model2	Model3
y-intercept	-23.21**	1.592	-25.73**
Airport density / 1 mln people	1.205**	1.460**	1.538**
Hospital beds / 10 000 people	0.239**	0.221**	0.233**
Quality of education system, score	4.904**		
Costs of starting a business, % GNI per capita		-0.592*	
Quality of ground transport network, score			4.589*
R ²	0.35	0.34	0.34
N	48	48	48

Note: * significant at p<0.1, ** significant at p<0.05

The correlation matrix shows that Greece can also efficiently take some other actions:

- better transparency of policy-making, enforcement of ecological regulation, ensuring property rights, improvement in police service, labour market liberalization, better local availability of research and training services, and improving sports infrastructure – at the government level;
- wider use of ICT, especially for marketing, and staff training by companies – at the company level;
- policy of cheap euro – at the ECB level.

The biggest problem under budget constraints is that some of the suggested actions are costly enough while the expected positive effect would appear only in the long run.

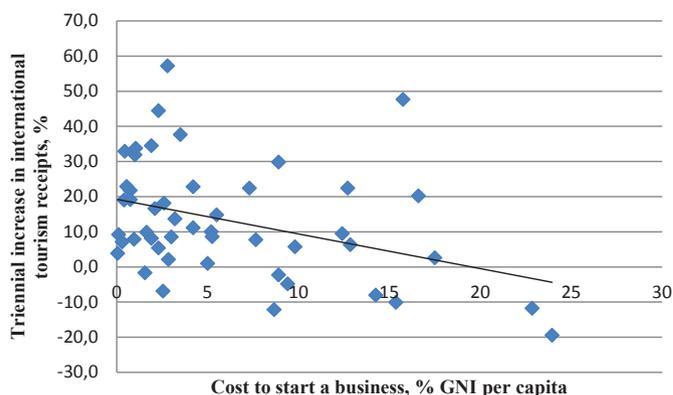


Fig. 1. The Effect of Cost to Start a Business on the Competitiveness of Tourism Industry
Source: Developed by author using data from Blanke and Chiesa eds. (2009, 2013) and World Bank (2014).

An important component of raising competitiveness is attracting foreign investment. The recommendations can include state support of business considering regional priorities, synchronizing activities of public and private entities under seasonality of tourism demand, educating and retraining employees, supporting social tourism, involving the EU structural fund financing, selling public real estate assets, and organizing complex tourism clusters. Investments in upgrading hotel facilities, construction of big hotel complexes and private villas, alternative tourism, enlarging the range of services, and the supporting industries are the most welcomed.

6 Tourism Sector and Employment in Greece

We also analyzed the effect of trends in tourism and its factors on the employment. We used time series data in 1993-2012 for Greece only – data from Eurostat and World Development Indicators (World Bank 2014). The growth of employment in 3 tourism subsectors is used as a dependent variable. All the independent variables are growth variables. Some of the independent variables are used with 1 year lag. The results for 4 models are summarized in Table 2.

Table 2

Estimates for regression analysis of employment in the Greek tourism industry				
Subsector	Air transport	Hotels and restaurants	Hotels and restaurants	Recreational, cultural and sporting activities
y-intercept	-0.1436	-3.863**	48.166***	-2.710
Employment in air transport t_{-1}	1.964***			
Nights spent in hotels by nonresidents	-0.536***			
Tourism (travel services) exports t_{-1}		0.137***		
GDP t_{-1}		0.528**		
Prices t_{-1}		0.806***		
Real effective exchange rate (base year 2005)			-0.469**	
Tourism expenditures of the EU citizen				0.527**
R ²	0.56	0.68	0.31	0.24
N	18	20	20	17

Note: * significant at $p < 0.1$, ** significant at $p < 0.05$, *** significant at $p < 0.01$

It is clear that growth of tourism exports by 1% results in 0.14% increase in employment in hotels and restaurants next year (See Fig. 2). We see that it is rather deflation than inflation what is harmful form employment in the tourism sector.

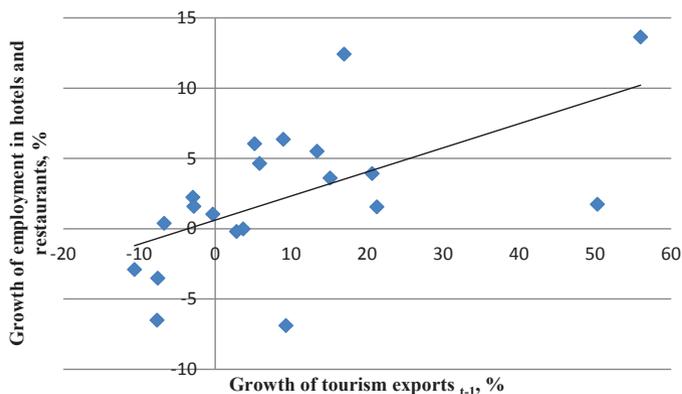


Fig. 2. The Effect of Tourism Exports in Greece on Employment

Source: Developed by author using data from Eurostat.

Further correlation analysis shows that tourism sector development also indirectly stimulates employment in the supporting industries in the short-run, in particular in wearing apparel manufacture, construction, retail trade, and land transport. Less significant effect is on public utilities, wholesale trade, and water transport.

7 Bilateral Tourism Links: Case of Greece and Ukraine

Special attention in our research is paid to bilateral tourism links between Greece and Ukraine. Greece is the 7th most visited country by Ukrainian tourists, and there is obvious imbalance in bilateral visits in favour of Greece. In 2013 200 thousand Ukrainians visited Greece, which was 8 times more than the number of Greek citizens visiting Ukraine.

We can compare the tourism potential in both countries by using the data of The Travel & Tourism Competitiveness Report. Formally Ukraine approaches Greece by tourism regulation, while readiness of infrastructure, cultural and natural resources in general lag behind. Except for healthcare and hygiene Ukraine takes places in the middle or lower tercile of countries by the tourism sector competitiveness indicators. Though more foreign tourists arrived in Ukraine, Greece had more international tourism receipts in the considered period. Both countries are mostly visited by tourists from Europe. But while the majority of tourists arrive in Greece by air, in Ukraine the most important is land transport, which can be explained by geographical location and targeted market segments.

Bilateral tourism links can be improved by implementation of the Association Agreement between the EU and Ukraine, harmonization of Ukrainian legislation to comply with the relevant European directives affecting the tourism sector, state and private partnership between Greece and Ukraine, and information activities. Under the economic crisis price elasticity of demand is high, therefore, prices for travelling to Greece by Ukrainians can be lowered by lifting visa regime, increasing competition in the air transport, low euro exchange rate or gradual revaluation of hryvnia under economic recovery, and wider use of internet-marketing.

Conclusions

International tourism is a movement of individuals beyond the country of permanent residence for a period less than 1 year, which is not connected to receiving income in the destination country. International tourism industry produces a complex product consisting of transport, accommodation, restaurant,

entertainment and other related services. International tourism is an increasingly important element of international trade. The stage of mass tourism started after World War II and now is succeeded by the stage of new technology and information.

Trade in tourism services may be explained by many theories of international trade. Specialized theoretical and empirical studies exist as well. The researchers mostly pay attention to such factors of tourist demand as income of tourists, prices, exchange rates, while other factors are less popular. Income and price elasticities of tourism demand vary significantly under various conditions.

Europe is the main tourism market in the world. Greece is the 8th biggest tourism service exporter in Europe and accounts for 1.5% of international tourism receipts of the world. Its tourism industry has a disproportionately big influence on its economy and the inbound tourism was an important driver of economic recovery of Greece in 2014 and balancing its foreign trade.

Considering geographical proximity and targeted market segments Bulgaria, Croatia, Cyprus, Egypt, Italy, Portugal, Spain, and Turkey are the main competitors of Greece. Therefore Greece should monitor developments in these countries. Nowadays Greece enjoys several competitive advantages: climate, seashore, historical and cultural resources, hotels network, health system, air transport, and government support. But there are also some weaknesses in business regulation, exchange rate, fuel prices, business management, and macroeconomic trends.

Our analysis of international tourism receipts growth factors in countries similar to Greece suggests that Greek government should improve business regulation and subject to availability of financing should continue to develop education and healthcare systems. Tourism enterprises should use more ICT and staff training. Cheap euro at the supranational level may also help support the inbound tourism. Investments in transport infrastructure, upgrading hotel facilities, alternative tourism to extend seasonality, and the supporting industries are recommended. But in most cases the positive effects would appear mostly in the long-run.

Tourism is a relatively labour intensive industry and thus may support the employment policy. Employment in various international tourism subsectors in Greece can increase under growing GDP, absence of deflation, devaluation of euro, and growth of tourism expenditures at the EU level. The indirect effect of tourism on employment is especially evident in case of manufacture of wearing apparel, construction, retail trade, and land transport.

Bilateral tourist flows between Greece and Ukraine are not balanced: Greece attracts more tourists. Ukraine is not a direct competitor of Greece in the tourist market because they attract mostly different segments of tourists. Bilateral tourist flows can be increased by lowering cost factors (both countries have suffered from economic crisis), legal harmonization under the EU Association Agreement, and more efficient marketing.

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Regulators for Adaptive Enterprise Development

NATALIIA MARYNENKO⁹

Abstract: The system of internal and external regulators of the enterprise's state under enterprise adaptive development is proposed in the paper. Aiming at regulating the enterprise's flexibility under adaptation to the external environment the following indicators are to be used: innovation regulator, reliability of the industrial materials and resources supply regulator, dealership regulator, competitive regulator, debtor's regulator, creditor's regulator, shareholders' regulator (external regulators) and personnel regulator, production regulator, marketing and sales regulator, production process technical support regulator, resources consumption regulator (internal ones). The integral index of the enterprise's internal and external environment regulators under adaptation formula is introduced. It is determined that by calculating the integral index the dynamics of the external and internal environment regulation during adaptation is to be obtained. This will make it possible to construct the map for the enterprise's adaptive responses (depending on the regulators location in a geometric plane) at regulating its development and to undertake a certain type of strategic actions, which reflect the impact of the enterprise's internal and external environment factors.

Keywords: Enterprise adaptation • Regulators • Enterprise development • External environment

JEL Classification M21

1 Introduction

Due to the instability of the external environment, its volatility and ambiguous dynamics modern industrial enterprises are forced to become more complex production systems. To ensure the manageability of such systems the enhanced methods and approaches are needed in order to meet the requirements and complexity of the external and internal environments of the enterprises, promote its effective development and provide an opportunity for timely response to the challenging market requirements.

The enterprises' regulatory arrangements being formed on the basis of conventional methods can be ineffective and irrelevant because of ignoring the external impacts and internal causal relationships and reactions occurring in the enterprises' internal and external environments in a more accelerated manner than 15–20 years ago.

2 Literature Review

Among the foreign scientists who focused their research interests on the enterprises' adaptation to market environment and to the enterprises' development and management are R. Ackoff, I. Ansoff, S. Beer, S. Bolotov, P. Drucker, P. Doyle, N. Hamalei, K. Kearns, D. Norton, V. Prabkhu, M. Porter, T. Saaty, V. Skurykhin, V. Srahovych, A. Solomatin, L. Rostryhin, V. Zabrodskyi. The scientific papers of Ukrainian scientists who have made the most significant contribution to the research of the domestic industrial enterprises' development under adaptation or some particular aspect of this issue belong to O. Amosha, I. Aliksieiev, M. Afanasiev, B. Andrushkiv, A. Voronkova, M. Budnik, M. Chumachenko, Ye. Halushko, S. Halushko, T. Horokhova, T. Hrynko, I. Hroznyi, M. Kyzym, T. Klebanova, S. Kudlaienko, Ye. Kuzkin,

⁹ Ternopil Ivan Puluj National Technical University, Department of Economics and Finance, 56, Ruska St., Ternopil, Ukraine, 46001, n_marynenko@ukr.net

T. Landina, R. Lepa, A. Melnyk, Yo. Petrovych, O. Pushkar, O. Raievnieva, L. Salomatina, V. Stasiuk, Yu. Stepanova, V. Tymokhin, O. Trydid, A. Turlyo etc.

3 Basic results of the research

Obydiennova T.S. (2014) prefers to use the resource and functional approach to the regulation of mechanical engineering enterprises and proposes to distinguish the selected existing mechanical engineering enterprises according to the degree of the structural reforms necessity.

T.S. Obydiennova also introduces the formation of the integral index of the results of structural reforms being conducted on the basis of the resource and functional approach and suggests the mechanism of forecasting the results of structural reforms applied at the mechanical engineering enterprises.

Voliannyk H.M. (2001) in the research paper proposes to determine the influence of a set of factors on the company's activities based on the application of such research methods as statistical and economic analysis, expert forecasting and synthesis. The four groups of factors impacting the industrial enterprises' development are determined. They are as follows: economic, organizational and commercial, social, political and legal ones.

Voliannyk H.M. also states that for production volumes regulation managers need an accurate information concerning the situation in the consumer market. This information can be obtained through the marketing research.

To ensure economic security and competitiveness of the national economy and individual economic subjects in the study (Kniiaz 2006a) the author emphasizes the need to intensify innovative development. The innovative development of mechanical engineering enterprises is a complex notion, which is characterized by the: number and level of economic efficiency of the innovations implementation at the enterprise; potential of the mechanical engineering enterprises for the development and application of innovations; mechanical engineering enterprise personnel readiness for changes.

The creation of an effective monitoring system at the mechanical engineering enterprise is a prerequisite for effectiveness of the functions researched implementation during the innovative development management. The components of the monitoring system and the relationship between them are specified by O.V. Kniiaz (2006b). The expected result of the monitoring system practical application is the early detection of factors that cause the problems of innovative development, and the development and application of measures and mechanisms for their elimination or prevention.

The most urgent problems of the mechanical engineering enterprise assessment and regulation are identified by O.V. Kniiaz. They are as follows: the discrepancy between the staff who are involved in the innovations implementation, and the actual needs; mechanical engineering enterprises workers unpreparedness to changes; negative experience on the implementation of innovations in the past; lack of funds and other resources for the implementation of quality control and regulatory measures; lack of market infrastructure; imperfect legal framework; discrepancy between the current organizational structure of the enterprise and its aims and the chosen strategy of innovative development; ambiguity and inconsistency of the mechanical engineering enterprise aims and innovation development goals.

Top-managers of the mechanical engineering enterprises state that today it is difficult to bring to work the following employees: skilled engineers who have the necessary experience and are ready to master new technologies; various levels managers who have experience in the innovative projects implementation and appropriate education; scientists who are able to perform as consultants in the area of innovations improvement and to develop innovations (Kniiaz 2006c).

Bobrovska O. Yu. (2001) has formulated the concept of the regulatory process of enterprises economic development as a sustainable stable integrated process of implementing general management functions towards positive changes in their economic state and development, making it possible to reveal the nature of the regulation mechanism deeper and the content of its components and methods that require improvements with the aim to enhance managerial influence on the enterprises economic development.

Bobrovska O. Yu. proposes the application of methodical approach to the industrial enterprises' economy management based on the introduction of a number of economic indicators that enable to quantify the level of the enterprises' economic processes aimed at determining and justifying the further directions of their effectiveness increase.

For regulating the enterprises flexibility under adaptation to the external environment the following system of external regulators should be used:

1. Innovation regulator – provides information on the effectiveness of implemented innovations or those being at the preparatory stage.

It is calculated as follows:

$$R_{in} = \frac{(R_p + R_{tech} + R_{eq})}{3}, \quad (1)$$

where R_p – is a regulator of product or process innovations which should take place in the environment under the impact of new requirements;

R_{tech} – is a technological innovations regulator;

R_{eq} – is a technical innovations regulator.

The product or process innovations regulator is calculated as follows:

$$R_p = \frac{V_p}{V_{pk}}, \quad (2)$$

where V_p – is the volume of innovative products or innovative processes implemented at enterprise being studied under the impact of new market conditions;

V_{pk} – is the volume of innovative products or innovative processes implemented at enterprise being a standard in the industry under the impact of new functioning conditions.

The technological innovations regulator is calculated as follows:

$$R_{tech_i} = \frac{K_i}{K_{i_{max}}}, \quad (3)$$

where K_i – is the priority on the importance and novelty of the technological process used in the i -th manufacturing process;

$K_{i_{max}}$ – is the priority on the importance and novelty of the most modern technological process used in the i -th manufacturing process.

The technical innovations regulator is calculated as follows:

$$R_{eq} = \frac{D_f}{D_{fk}}, \quad (4)$$

where D_f – is the share of the vacant technical equipment at the researched enterprise;

D_{fk} – is the share of the vacant technical equipment at the enterprise being a standard.

2. Reliability of the industrial materials and resources supply regulator:

$$R_{del} = \frac{(Q_n \times s_{def})}{(Q_i \times P)} \times 100, \quad (5)$$

where Q_n – is the amount of industrial raw materials and resources orders received in time from the given supplier;

s_{def} – is the share of industrial raw materials and resources orders without defects or deficiency from the given supplier;

Q_i – is the total number of industrial raw materials and resources orders from the given supplier;

P – is the cost of industrial raw materials and resources orders from the given supplier.

3. Dealership regulator (sales through the intermediaries):

$$R_d = \frac{V_{dp}}{V_p}, \quad (6)$$

where V_{dp} – is the volume of output being sold through the chosen intermediary organizations;

V_p – is the total output of the researched enterprise.

4. Competitive regulator:

$$R_c = \frac{S}{\max_{i=\{1; \chi\}} S_i}, \quad (7)$$

where S – is the enterprise's market share;
 S_i – is the market share of the i -th competitor;
 χ – is the total number of competitors in the industry.

5. Debtor's regulator:

$$R_{deb} = \sum_{i=1}^{\delta} \left(T_i \times \frac{D_i}{D} \right) / \max_{i=\{1; \delta\}} T_i, \quad (8)$$

where T_i – is the i -th accounts receivable repayment period;
 D_i – is the i -th accounts receivable volume;
 D – is the total amount of accounts receivable at the researched enterprise;
 δ – is the total number of debtors at the researched enterprise.

6. Creditor's regulator:

$$R_b = \frac{(C - Z)}{O}, \quad (9)$$

where C – are the researched enterprise circulating assets in a given period;
 Z – is the researched enterprise working capital;
 O – is the researched enterprise current liability in a given period.
The creditor's regulator recommended value is equal to one.

7. Shareholders regulator:

$$R_a = A_t / \max_{i=\{1; 5\}} A_i, \quad (10)$$

where A_t – are the dividends in the current period;
 A_i – is the maximum amount of dividends over the past five years.

Thus, the approach to the enterprise's adaptive development regulation on the basis of the enterprise's state external regulators under adaptation is offered in the research.

For regulating the enterprises flexibility under adaptation to the external environment the following internal regulators are proposed to be used:

1. Personnel regulator:

$$R_l = L_{turnover} \times L_{sk} \times L_{wag}, \quad (11)$$

where $L_{turnover}$ – is the labour turnover ratio;
 L_{sk} – is the coefficient of the employees skills;
 L_{wag} – is the average rate of the employees' wages growth in the researched enterprise.

2. Production regulator:

$$R_{prod} = \frac{F_{fa}}{F_{max}}, \quad (12)$$

where F_{fa} – is the fixed assets being used in the production process;
 F_{max} – is the maximum production capacity of the researched enterprise.

3. Marketing and sales regulator:

$$R_{sl} = \frac{V_{real}^a}{V_{real}^p}, \quad (13)$$

where V_{real}^a – is the actual sales volume;
 V_{real}^p – is the planned sales volume.

4. Financial regulator:

$$R_{fin} = \frac{M_f}{M_p}, \quad (14)$$

where M_f – is the actual cash flow;

M_p – is the planned cash flow.

5. The production process technical support regulator:

$$R_{ts} = 1 - \left(\frac{\sum_1^n J_f - J_p}{\sum_1^n J_p} \right), \quad (15)$$

where J_f – is the actual amount of technical equipment being used in the production process;

J_p – is the planned amount of technical equipment to be used in the production process.

6. Resources consumption (industrial raw materials) regulator:

$$R_{res} = \frac{G_f}{G_p}, \quad (16)$$

where G_f – is the actual need in the raw materials;

G_p – is the planned need in the raw materials.

For calculating the integral index of the enterprise's internal and external environment regulators under adaptation, the following formula is to be used:

$$R_{out,in} = \sqrt[n]{\prod_{i=1}^n R_i} \quad (17)$$

where $R_{out,in}$ – is the enterprise's internal and external environment regulator;

R_i – is the enterprise's internal and external environment regulator under adaptation by the i -th indicator of the internal or external system of indicators;

n – is the number of indicators.

According to the obtained results while computing the $R_{out,in}$, the dynamics of the external and internal environment regulation during adaptation should be received. A set of measures to be undertaken while regulating the enterprise adaptive development can be considered depending on the regulators location in a geometric plane (figure 1).

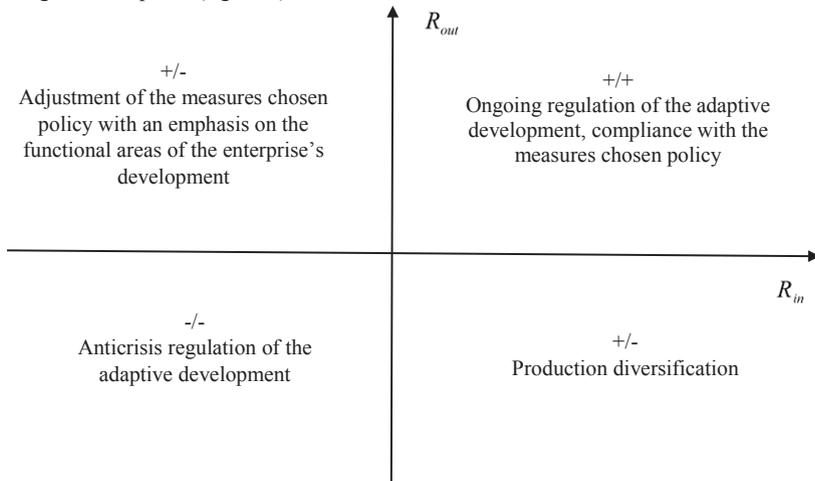


Fig. 1. Map for the enterprise's adaptive responses during its adaptive development regulation

Source: The chart was developed by the author.

4 Conclusions

The approach to the enterprise adaptive development regulation based on the system of internal and external regulators of the enterprise's state under the adaptation is proposed. By taking into account the calculation of the integral index of the enterprise's state dynamics under the adaptation, it is possible to construct the map for the enterprise's adaptive responses at regulating its development and to model a certain type of strategic actions, which reflect the impact of the enterprise's internal and external environment factors.

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Financial Balance as a Tool for Macro-Financial Planning

IVAN MEDVETSKYI¹⁰

Abstract: The article is devoted to the role of macro-financial planning and consolidated balance of financial resources and public expenditures in development of a country. It explains such definitions as *planning, macro-financial planning, and macro-financial policy, consolidated balance of financial resources and public expenditures*, their meaning, place and role on the macro-financial level. The author has presented his own terms concerning these above-mentioned definitions. The article reveals the interrelationship of “consolidated balance of financial resources and public expenditures” with “macro-financial planning”, and explains the importance of medium and long-term planning of the country’s development and role of state regulation of the economy. The work has determined the essence of “consolidated balance of financial resources and public expenditures” and its impact on the effectiveness of the economic development. Special attention is focused on macro-financial planning as an effective tool of the development of a state.

Keywords: Planning • State Regulation of Economy • System of National Accounts • Macro-financial Planning • Macro-financial Policy • Consolidated Balance of Financial Resources and Public Expenditures

Introduction

John Maynard Keynes (1883–1946) made an important contribution to finding a solution for crucial economic and social development problems. It should be noted, that the publication of fundamental work by J. M. Keynes «The General Theory of Employment, Interest and Money» [1] (1936) became, to some extent, an answer to the economic and social challenges of the new level of development of national economic systems and one of the starting points for changes in the regulation of the economy and finance by the state. This was preceded by the world economic crisis — Great Depression of 1929–1933, whose the scale has not been unsurpassed in history. At that time it was essentially influenced by further development of the global economic system.

Among the main ideas developed by J. M. Keynes (the term — *Keynesianism*) was the idea that capitalism in its absolute form (capitalism of free competition) was not subject to self-regulation, moreover, without regulation it can lead to destructive consequences, that’s why the control over it should be taken by the government. The government, if necessary, can and should interfere in the economy, but mostly with the help of market tools. J. M. Keynes is the founder of state regulation of the economy, and many scholars consider him to be the founder of the “theory of regulated capitalism”, where capitalism as a system is regulated by the government (and / or, as modern researchers believe, by international organizations). In his turn, he developed countercyclical regulation of the economy, built-in stabilizing factors and other tools of state regulation. Among the main mechanisms of influence on the regulation and control of the economy, J. M. Keynes advised the experts to use the tools of the state budget.

Literature Review

The United Nations in the XX–XXI centuries has been actively researching the “*System of National Accounts*” direction. The results of the works are presented in the relevant reports of the United

¹⁰ Postgraduate of Finance Department, Kyiv National Economic University named after Vadym Hetman, 54/1 Prospect Peremogy, 03680, Kyiv, Ukraine. e-mail: Medvetskyi_I_A@ukr.net
Scientific Supervisor: Doctor of Economics, Professor V. M. Fedosov.

Nations [19–25].

During the XX–XXI centuries at different times the scientists and practitioners in the countries of the former Soviet Union paid special attention to the direction of the “*Consolidated Balance of Financial Resources and Public Expenditures*”, in particular: A. M. Alexandrov [2], D. A. Allakhverdyan [3], L. E. Babashkin [4], B. G. Boldyrev [5], O. D. Vasylyk [6], A. M. Volkov [4], V. F. Garbuzov [7], N. Y. Glushchenko [6], T. V. Guida [18], I. A. Dymshits [8], I. D. Zlobin [8; 9], V. I. Kolesnikov [14], E. V. Kolomin [4], V. V. Lavrov [10], N. N. Lyubimov [3], A. M. Lyando [11], P. S. Nikolsky [18], V. M. Oparin [12], K. N. Plotnikov [13], G. L. Rabinovich [14], N. N. Rovinsky [2], O. R. Romanenko [15], M. V. Romanovsky [14], N. G. Sychev [5], A. K. Suchkov [8], V. M. Fedosov [16], N. V. Tsapkin [17], M. K. Shermenev [18], S. I. Yuriy [16] and others.

The consolidated balance of financial resources and public expenditures was used in the Soviet Union, as a real tool of an analytical character. In their turn, Western scholars were interested and used this important practical direction in the XX century, and at present they are also interested in it and use it. Taking into consideration this unique experience, we consider it necessary to reactivate this scientific and practical tool of “consolidated balance of financial resources and public expenditures” for its further usage in the process of planning efficient and effective development of the country.

Basic Results of the Research

Modern scientists all over the world are making their own forecasts concerning a new model of the global economic system for the present and future times. In particular, modern scientists focus on these integrants of a new model of the global economic system, which, mainly, was not characteristic of the XX century, but have already become modern trends of the XXI century, namely: (1) knowledge society; (2) consequences of globalization processes; (3) socially-oriented market economy; and others. These modern trends of the XXI century, “knowledge society” in particular, even today, influence everything to some extent, including budget and macro-financial planning of the state.

For economic and finance planning we make use of both: administrative and market methods. As a rule, state planning in different regions of the world has its own features. But, recent experience demonstrates a new trend of moving from administrative to market methods of planning economic development and finance in post-socialist countries.

Generally, the term “*planning*”, if we take the “state” as the object of planning, defines the process of design, analysis, approval and realization of planning and forecasting the development of the state at a definite time period, as well as coordination and control over them. The economic science identifies a number of types of planning, and each of them, certainly, has its own features. We consider *directive* and *indicative* planning. *Directive planning* presents itself as strict adherence to both: qualitative characteristics and time frame of a specific regulated plan of future development. In its turn, *indicative planning* presents itself as a plan, as some direction of future development, which can be, to some extent, adjusted due to some peculiarities of the present time.

Analyzing *indicative planning*, we consider it necessary to explain it in the context of a known *dirigisme* doctrine. The idea of *dirigisme* originated from France in the first half of the XX century. Eventually, in the XX century the researchers began to implement, in one way or another, the idea of *dirigisme* in different European countries: in Great Britain, Spain, Italy, the Netherlands, Germany, Norway, Sweden and others. And as a scientific and practical approach, *dirigisme* was, to some extent, promising in the economies of China, Malaysia, Singapore, the United States of America, Japan and others; as they have a certain level of state regulation. As a matter of fact, this scientific direction rests on some regulation of the economy on the part of the government. This regulation has indicative character. Therefore, it can be attributed, in one way or another, to indicative planning.

For the economic and finance planning the direction of “*System of National Accounts*” played an important role in the second half of the XX century, and, today, the trend of “*System of National Accounts*” has become rather significant. *Table 1* presents the evolution of the reports of the United Nations concerning the development of the direction “System of National Accounts”.

Table 1

The Evolution of the Reports of the United Nations concerning the Development of the Direction “System of National Accounts”*

The Year of Adoption	The Title of the Report
1947	Measurement of National Income and the Construction of Social Accounts [19].
1953	A System of National Accounts and Supporting Tables [20].
1960	A System of National Accounts and Supporting Tables [21].
1964	A System of National Accounts and Supporting Tables [22].
1968	A System of National Accounts [23].
1993	System of National Accounts 1993 [24].
2008	System of National Accounts 2008 [25].

*Note: compiled by the author on the basis of the above-mentioned reports of the United Nations [19–25].

It should be noted, that the “*System of National Accounts*” generally presents an economic substantiation, and particularly, it is a financial basis for the *consolidated balance of financial resources and public expenditures* and *macro-financial planning*. The development of economic relations in the XX century and up until now, made it possible to implement the “*System of National Accounts*” into practice. Today, the “*System of National Accounts*” is that theoretical and methodological basis and, to some extent, practical foundation, which should lay the foundation of both: *consolidated balance of financial resources and public expenditures* and of *macro-financial planning*. Let us place the mentioned definitions in accordance to their inter-influence in the sequence: from specific to general: “*System of National Accounts*” → “*Consolidated Balance of Financial Resources and Public Expenditures*” → “*Macro-financial Planning*”. Let us consider the role of these scientific trends in the XX–XXI centuries and up until now. We believe that in the development of the “*System of National Accounts*”, today, and, in our opinion, in future, its social and environmental vectors will play an important and valuable role; this corresponds to the dimensions of the world concept of sustainable development.

The development of any economic model needs medium and long-term planning. For effective planning of economic development and of state finance we consider it necessary to analyze, explain and present our own definition of “*macro-financial planning*”. *Macro-financial Planning* is the process of design, analysis, approval and implementation of development planning of all levels of sectors of state finance, its fiscal component for corporate finance and finance of households and population in general, for corresponding financial time period; macro-financial planning is a part of macroeconomic planning of the state and an important direction in the general system of planning.

In their turn, the modern scholars and financial practitioners pay special attention to the strategic value of the “*consolidated balance of financial resources and public expenditures*” and its role in macro-financial planning of development of the country. Although, the consolidated balance of financial resources and public expenditures, in the first place, was used by the states of planned economic model, but in the given situation, the developed countries of the world have already been interested in this unique experience of macro-financial planning for a long time and have implemented it, too. If we analyze the meaning of the consolidated balance of financial resources and public expenditures, then, it should be noted, that it is a fundamental component of macro-financial planning and it is an important position of public finance. This is one of the strategic tools that can ensure balanced social and economic development of the country.

In theory and practice of finance, there, certainly, exist sufficient number of tools for effective implementation of the financial and macro-financial planning of the country, where each has its own advantages and disadvantages. Let us, in its turn, consider some features of such an important tool and part of macro-financial planning as “*Consolidated Balance of Financial Resources and Public Expenditures*”. It should be noted, that in the XX–XXI centuries, most scientists constructively and objectively evaluated the need for qualitative financial and macro-financial planning of the country. Some of the works by the scientists of the XX–XXI centuries are presented in Table 2 in their evolutionary sequence of defining the term “*Consolidated Balance of Financial Resources and Public Expenditures*” and definite explanations and substantiations for the need, as well as, the importance of this tool are given, too.

The idea of the “*Consolidated Balance of Financial Resources and Public Expenditures*” originated in 1930-s in the Kazan Financial and Economic Institute (Kazan, Russia). Wide-spread popular science monograph by A. M. Lyando “Questions of the Financial Balance of the National Economy (Essays of the

History and Methodologies of the Compilation)” [11] should be given special attention, as it is an important work among the scientific papers of that time. Besides, many other works by the scientists who made research in that field deserve attention and wide recognition. Quotations from the works of some scientists are presented in *Table 2*.

Table 2

Evolution of the Determinations of the Definition
 “Consolidated Balance of Financial Resources and Expenditures of State”*

Year	Author(s)	Determination
1952	A. M. Alexandrov, N. N. Rovinsky	Financial planning is finalized by the compilation by the State Planning Commission of the USSR of the consolidated financial balance of the national economy. It includes financial plans of all levels of national finance and reflects their financial interrelations with the socialist enterprises and organizations and the population. At the same time, it covers all the balances of revenues and expenditures and financial plans of state-owned enterprises and sectors of the economy, as well as co-operative and collective-farm organizations; budgets of institutions and organizations and the balance of monetary incomes and expenditure of the population. [2, p. 53].
1963	A. M. Lyando	<i>Consolidated financial planning</i> of the national economy is directed at finding the right proportions through aggregated financial relations between the consumed and the accumulated part of the national income, between public revenues and expenditures, of the population and enterprises, as well as between individual economic regions. [11, p.p. 26–27].
1971	I. D. Zlobin	...the consolidated financial plan characterizes the general volume and structure of the financial resources, the size and direction of the expenditures, the balance ratio between them. [9, p. 52].
1984	V. F. Garbuzov	<i>The financial consolidated balance</i> is a system of financial indicators characterizing the most important proportions of the formation and usage of the financial resources of the national economy for a definite period (one year, five years and etc.). In modern economic literature the financial consolidated balance is often called the consolidated financial plan or the balance of financial resources and expenditures. [7, P. 81].
2012	V. M. Fedosov, S. I. Yuriy et al	Taking into consideration the full volume of resources as a whole in the state, irrespective of the fact, in which definite sector they were formed and in which they are used, the balance of financial resources and public expenditures reflects their general characteristics in accordance to the sources and directions. It shows the financial possibilities of the country and is an independent settlement document of a synthetic character. It allows using its indicators as criteria for evaluation of the effectiveness of the economy. They supplement the general indicator of the prosperity of the social production: the gross domestic product per capita. [16, P. 107].

*Note: compiled by the author on the basis of the marked works [2, p. 53; 7, p. 81; 9, p. 52; 11, p.p. 26–27; 16, p. 107].

In its turn, let us define this definition ourselves. *Consolidated Balance of Financial Resources and Public Expenditures* is a system of macroeconomic and macro-financial indicators, whose basis includes the consolidated balances of all levels of state finance, corporate finance and finance of households and the population as a whole, whose focus is directed at the strategic social and economic development of the country; it is not approved by law, and performs the role of the analytical document of the macroeconomic and macro-financial levels; “consolidated balance of financial resources and public expenditures” is the fundamental basis for the social and economic development of the country. In addition, it should be noted, that “consolidated balance of financial resources and public expenditures” is the result of the macro-financial planning of the country.

Consolidated balance of financial resources and public expenditures gives more possibilities at the macro-financial level for the formation, accumulation, distribution and usage of the financial resources. It should be understood, that *macro-financial level* is a general national level which includes all levels of state finance, corporate finance and finance of households and population as a whole; the objective process of formation, accumulation, distribution and usage of the financial resources takes place at the macro-financial level. *Macro-financial planning, macro-financial policy, consolidated balance of financial resources and public expenditures* are the definitions of the macro-financial level.

Certainly, the role and place of the budget and budget planning is decisive on the macro-financial level. Let us consider the role and place of the budget in the consolidated balance of financial resources and public expenditures. The revenue and expenditure side of the budget of a country as a whole is a part of the

consolidated balance of financial resources and public expenditures. Some funds also belong to the budget, for example, the pension fund (under solidarity pension system), and it can accumulate considerable financial resources. Consolidated balance of financial resources and public expenditures has full-length financial information about the public finance of the country. Certainly, it can and should be transparent for the society in one way or another. However, rather natural is the fact that some of its components can be confidential, and thus, it cannot be fully transparent.

Taking into consideration the realities of the modern state of the economy and finance, the idea of the “consolidated balance of financial resources and public expenditures” needs renewal. In our opinion, this tool of the macro-financial level is really necessary as a call of the times. Therefore, planning the development of the state we should not neglect this tool. This is the analytical document, which really displays all the advantages and disadvantages of the modern planning of national development on the macro-financial level at a definite time.

Conclusions

Summarizing the above-mentioned, we consider that practical *macro-financial planning* direction and its *consolidated balance of financial resources and public expenditures* component are really important tools of the efficient and effective development of the country. In its turn, the consolidated balance of financial resources and public expenditures is a fundamental basis for practical implementation of macro-financial planning. *Macro-financial planning, macro-financial policy* and *consolidated balance of financial resources and public expenditures* are important vectors of the macro-financial level. For real implementation of the macro-financial planning the government should: firstly, realize the *consolidated balance of financial resources and public expenditures* direction; secondly, implement medium and long-term budget planning at the qualitatively high level, as a crucial component of the macro-financial planning; thirdly, realize the long-term macro-financial policy of national development. To some extent, due to historical reasons, the forgotten *consolidated balance of financial resources and public expenditures* direction needs real reactivation in the context of the present state of the economy in general, and of finance in particular, for the effective implementation of the macro-financial planning to the development of the country.

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RESEARCH MATERIALS

Review of China’s Agricultural Policy: Biofuels Development and Implications (2016)

OLEKSANDR ROGACH¹¹
 OLEKSANDR PIDCHOSA¹²
 IULIIA SHKRABALIUK¹³

Introduction

Biofuels are energy carriers that store the energy derived from biomass. A wide range of biomass sources can be used to produce bioenergy in a variety of forms (Figure 1). Biofuels may be referred to as renewable energy because they are a form of transformed solar energy. Biofuels can be classified according to source and type. They may be solid, liquid, or gaseous, such as biogas (FAO 2008).

In this paper, the term *bioenergy* refers to energy produced from biomass and *biofuels* refers to solid, liquid and gaseous fuels produced from the processing of biomass (organic matter derived from plants or animals). Biofuels include fuels and bioadditives such as bioethanol, biodiesel, biobutanol, biomethanol, biogasoline, etc. and combustible oils produced by plants; gaseous biofuels such as biogas or syngas; and solid biofuels such as charcoal and bio-char. The most important biofuels today are ethanol (made mainly from sugar and cereal crops via fermentation) and biodiesel (made mainly from vegetable oils via transesterification).

Two categories of biofuels are distinguished. *Conventional (first generation) biofuels* are fuels derived from sugars or starch via fermentation or from vegetable oils through transesterification. They include biofuels produced from feedstock, which can also be used for food and feed, such as sugar, starch and vegetable oils. These biofuels include sugar and starch-based ethanol, and vegetable-oil-based biodiesel. Typical feedstocks used in these processes include sugarcane and sugar beet, starch-bearing grains such as maize and wheat, and oil crops such as rape (canola), soybean and oil palm. First generation biofuels are produced on a commercial scale.

Advanced (second generation) biofuels are fuels and additives that do not belong to the category above and are produced through advanced technologies. They include biofuels produced from feedstocks that do not compete directly with food and feed crops, such as waste and agricultural residues (i.e. wheat straw, used cooking oils, municipal waste), non-food crops (i.e. miscanthus and short rotation coppice) and algae. Most advanced biofuel technologies are still under R&D, pilot or demonstration phases (EC 2013).

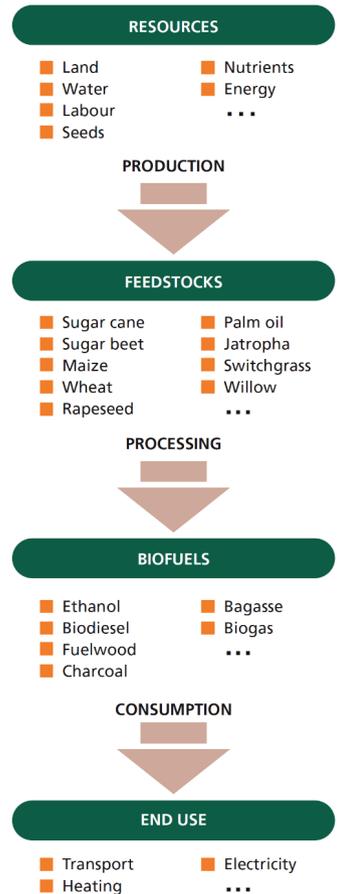


Fig. 1. Biofuels – from feedstock to end use
 Source: FAO (2008).

¹¹ Dr. of Econ. Sciences, Prof., International Finance Department Chairman. e-mail: alexander.rogach@gmail.com

¹² PhD (in Economics), Assistant Professor, International Finance Department. e-mail: o.pidchosa@gmail.com

¹³ PhD (in Economics), Research Fellow, Research department. e-mail: iuliashkrabaliuk@knu.ua

Institute of International Relations, Taras Shevchenko National University of Kyiv, 36/1 Melnikova str., Kyiv, Ukraine.

Potential economic gains from biofuels along the value chain

The development of biofuels, worldwide, offers both opportunities and challenges for developing countries. For non-oil producing countries, biofuel production has the potential to provide at least a partial substitute for costly oil imports. Biofuels also have the potential to provide an additional source of agricultural income and the development of a biofuel industry could contribute to improve local infrastructures and rural development. High crop prices may be beneficial for rural poor who will receive a better price and offer new export opportunities but this may also be met by a corresponding challenge for food security, notably for poor, urban populations.

High agricultural commodity prices may provide longer-term potential opportunities for agriculture and rural development. Raising agricultural supply in the medium and longer-term will require new investment support to producers in the form of better access to technologies and better production techniques (Rossi & Lambrou 2009). Technical and institutional constraints prevalent in developing countries, such as rural financial services constraints, may hamper efforts to boost agricultural supply. While in the short-term biofuels could have negative impacts on food security, in the long-term, the development of a sustainable biofuel industry could promote access in rural areas to cheaper and safer energy supplies, supporting economic growth and long-term improvements in food security.

In the determination of biofuel economic impacts, the entire value chain comprising the production of feedstocks, their processing, blending, distribution and marketing will have to be taken into account. The extent to which the value chain is developed and the challenges for its development are the main questions addressed. In developing countries, it is frequently observed that the value chain is only developed up to the production level; the rest of the value chain is undeveloped with no stable market for seeds. Furthermore, rising biofuel feedstock prices provide strong incentives for exports, undermining the development of a domestic biofuel industry. The viability of the biofuel sector will depend on developments in oil prices as well as international biofuel policies. In developing countries, there is a need to implement policy measures to motivate the private sector to invest in the value chain, ranging from producers to consumers of bioenergy (farmers, processors, traders and consumers) (EC 2013).

It is fundamental to distinguish between the different roles of biofuels and bioenergy at large in the broad market system in order to establish the impact on emerging economies, including on access to energy. The FAO, for example, distinguished the role of bioenergy as follows (Table 1).

Table 1

Energy access and supply security

Bioenergy as the main output of the chain	This is the case for biofuels initiatives established to serve household cooking, mobility and electrical applications. Energy demand is relatively constant in that people cannot do without energy and must find it somewhere to serve their basic needs. In this respect, it forms a stable demand with growth potential in response to better, cheaper and more convenient sources, while in some markets the environmental impact of the fuel is also a relevant criterion.
Bioenergy as a productive input to another chain	In this case, the bioenergy chain is reliant for its end market on the other productive chain and the bioenergy market chain is governed by the requirements and success of that chain.
Bioenergy as a by-product of another chain	In these cases, the likely extent of the bioenergy market chain is also limited by the size of the main market chain which governs the amount of residue by-products available.

Source: FAO (2009).

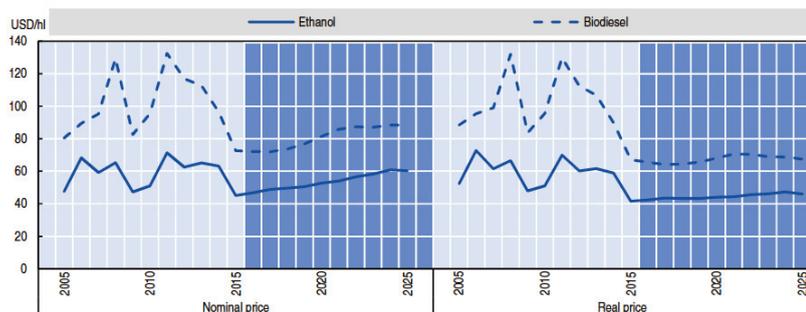
International Biofuels

Since the early 2000s, the development of global biofuel markets has been driven by policies fostering their production and use. Policies were initially motivated by a combination of factors, including the view that biofuel use would improve energy security and reduce greenhouse gas emissions (GHG). Government support for the biofuel industry takes the form of blending mandates, exemptions from taxes applied to corresponding petroleum fuels, and investment support. Biofuel markets are also affected by sustainability criteria, fuel quality standards, and import tariffs on ethanol and biodiesel. The projections presented below are based on a set of assumptions concerning the evolution of biofuel policies around the world in the medium term.

OECD-FAO Agricultural Outlook 2016-2025

In conjunction with the assumed evolution of crude oil prices, the world ethanol price is projected to increase over the projection period from its lowest level of USD 45/hL to reach USD 60,3/hL by 2025 (Figure 2). Expressed in real terms, the world ethanol price is expected to be 10 % higher by 2025. In fact import demand from a variety of countries is expected to remain modest over the outlook period and trade

expansion potentials from the United States and Brazil are significant. This means that the pressures on international ethanol markets are not expected to be particularly important. World biodiesel prices expressed in nominal terms are expected to increase by 22 % over the outlook period reflecting partly the projected evolution of vegetable oil prices. Demand for biodiesel should be mostly driven by policies in place and not by market forces. Biodiesel trade is expected to mostly occur between Argentina and the



United States to meet the assumed increasing biodiesel mandate and to remain limited in the rest of the world because of duties in place.

Fig. 2. World biofuel prices¹⁴
Source: OECD/FAO (2016).

Coarse grains and sugarcane will remain the dominant ethanol feedstock. Biofuel production is expected to consume 10,4 % and 12 % of global coarse grains and vegetable oil production in 2025, respectively. By 2025, 22% of global sugarcane production should be used to produce ethanol. Global ethanol production is projected to increase modestly during the outlook period from about 115,6 about 115,6 bln. L in 2015 to nearly 128,4 bln. L by 2025. Global biodiesel production is expected to reach 41,4 bln. L by 2025 corresponding to a 33 % increase from the 2015 level. Global ethanol use is projected to increase by 12,4 bln. L during the outlook period. Ethanol use in developing countries is divided into fuel and other uses, with non-fuel use often taking the largest share. Biofuel consumption is driven by blending targets or mandates. In China, fuel ethanol use is expected to expand by 1 bln. L. Global biodiesel use is expected to increase by 10 bln. L over the projection period. Global ethanol trade is expected to expand modestly during the period leading to 2020 and then retract to levels comparable to 2015 levels. Biodiesel trade is projected to remain relatively stable over the outlook period at about 2,6 bln. L over the next 10 years, with Argentina as the lead exporter.

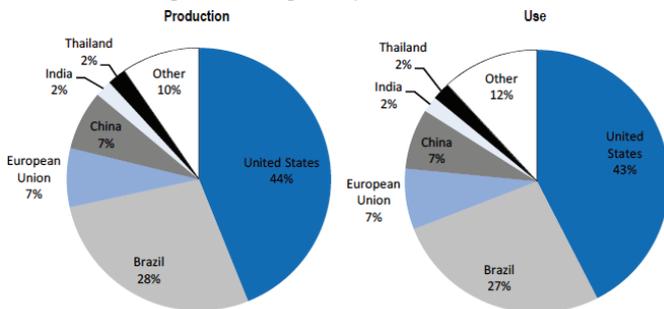


Fig. 3. Regional distributions of world ethanol production and use in 2025
Source: OECD/FAO (2016).

USDA Agricultural Projections to 2025

According to the latest USDA projections, global expansion of biofuel production will continue during the next decade, although at a slower pace than over the last half decade. This slowdown in part reflects lower crude oil prices. However, it is also attributable to technical limits and some withdrawal of government support for biofuels. As a result, demand for biofuel feedstocks is also projected to grow more slowly. The largest global biofuel producers include the United States, Brazil, the EU, and China. Ethanol is the primary biofuel produced in the United States, Brazil, and China, whereas biodiesel accounts for about three-fourths of EU biofuel production. Indonesia and Malaysia continue to increase biofuel production from palm oil, and the Philippines is expanding copra use for biofuel.

Canada replaced the EU as the world's largest importer of biofuels in 2014, mostly due to EU border protection measures that sharply lowered biofuel imports. The latest USDA projections foresee that Canada will be the world's largest importer of biofuels throughout the projection period of 2016-2025, with ethanol

¹⁴ Note: Ethanol: wholesale price, US, Omaha; Biodiesel: Producer price, Germany, net of biodiesel tariff and energy tax.

accounting for the majority of those imports. The United States supplies most of Canada's ethanol imports. Argentina, Brazil, and the United States are the world's largest biofuel exporters, with Argentina specializing in soybean oil-based biodiesel, Brazil in sugarcane-based ethanol, and the United States in corn-based ethanol. Biofuel exports from each of these three countries grow steadily in the projections although exports from Argentina and Brazil are constrained by increased domestic use of biofuels. Indonesia and Malaysia have also implemented policies favoring more domestic consumption of biodiesel in lieu of exports (Westcott & Hansen 2016).

China's № 1 Central Document (2016)

Agriculture, rural community and farmer related issues are once again the topic of China's 'No. 1 Central Document' this year, the first policy document jointly released by the Central Committee of the Communist Party of China and the State Council on January 27, 2016 (Table 2). China applies its new concept of development to agricultural modernization to make the process more efficient, inclusive and environment-friendly. The document vowed 'marked progress' in agriculture by 2020 to ensure society becomes moderately prosperous. Upholding an innovative, coordinated, green, open and shared development concept, the authorities called for faster transformation of agricultural models. The importance of innovation was and supply-side structural reform in the agriculture sector was emphasized. After years of good harvests, China has grown out of a food shortage period, but structural problems remain unsolved: some produce is over-supplied and some in short supply. Total grain output increased 2,4 % y-o-y to 621 mln. tons in 2015, the 12th straight year of growth. The document said grain output should be increased, and food security through the supply of major farm produce guaranteed (SAIN 2016).

Table 2

Key Areas of State Support Policy according to China's Document № 1 (2016)

Agricultural modernization	China will improve the quality and competitiveness of its agricultural products through high-quality farmland and professional farmers catering to the demands of modern agriculture.
	At least 53 mln. hectares of high-quality farmland will be created by 2020, which will be highly productive to ensure stable yields, be cultivated in an environmentally-friendly manner and able to withstand floods and droughts.
	Training for farmers, increased investment in technology, modernization of the seed sector and diverse business entities and models will increase the pace of change.
	Production structure must meet diverse consumption demand with enterprises encouraged to 'go overseas' to balance exports and imports.
Green agriculture	Sustainability will come through improved efficiency of resource use and environmental protection.
	Policies and technological support will protect resources and raise efficiency, preventing resources from over-exploitation.
	China will follow its 'red-line' system and guarantee that land dedicated to farming never shrinks to less than 120 mln. hectares.
	China will tighten water resource management, level of groundwater will be closed watched.
	By 2020, woodland coverage will be above 23 % and wetland acreage will be above 800 mln. mu (53,33 mln. hectares). More farmland will be turned into forests or pastures.
Integrated development	New national standards on food safety will be prioritized and standards on pesticides residues and veterinary drugs will reach the international standards by 2020.
	China aims to increase farmers' incomes by pushing integrative development of primary, secondary and tertiary industries in rural regions.
	Technological innovation should advance the processing of agricultural products, thus, bringing more income to farmers. Specifically, the processing industry should develop its own equipment while outdated processing enterprises should be eliminated.
	An unified, open, competitive market for modern agricultural products needs to be established to promote agricultural products. To this end, logistics cost will be reduced while rural e-commerce will be encouraged.
Agricultural investment	Modern agriculture is to go beyond efficiency and technology. Meanwhile, the government will continue to push on-going rural reform of pricing and subsidy mechanisms but with a new emphasis on developing agriculture insurance mechanisms and rural finance system innovations.
	China plans increased spending on agriculture to boost rural development.
	The agricultural sector will be a key area for fixed-asset investment.
	The government will channel more funds to poor farmers, construction of irrigation programs, industrial convergence in rural areas, and wholesale produce markets.
	The central authorities pledged financial aid to key areas including farmland protection and the increase of grain production.
	The government will also encourage financial institutions to make more loans to agriculture businesses.

Source: MOA (2016); China Water Risk (2016).

China's Biofuel Industry

China implemented a fuel ethanol programs starting in the early 2000's in response to abundant grain supplies. The government switched course in 2010 when increasing domestic grain prices triggered concerns over possible shortages and caused China to become a net corn importer. Since then government policy has dictated that biofuel development not compete with crops intended for human or animal consumption. Government subsidy policies have also switched to only supporting non-grain based biofuels. At the same time, China has built up enormous reserves of corn, wheat, and rice that combined exceeds 200 mln. tons. Industry estimates that 15 to 20 mln. tons of these reserves are sufficiently moldy so that they are no longer suitable for human consumption or feed use. The biofuel industry and some provincial officials are lobbying the government to subsidize the use of moldy grain for biofuel production. However, China Ministry of Finance is reportedly reluctant to increase expenditures on subsidies.

Restrictions on grain-based ethanol and challenges in producing commercially viable cellulosic biofuels have resulted in a policy of supporting so called 'Generation 1.5' biofuels, which are produced by non-grain based feedstocks such sweet sorghum and cassava. Some of these crops can be grown on marginal land and require fewer inputs, but supply is insufficient to support large-scale industrial ethanol production. The government introduced a 750 RMB per ton subsidy for Generation 1.5 ethanol production in 2013. Cellulosic ethanol production receives a slightly higher subsidy of 800 RMB per ton. Direct subsidies for conventional grain-based biofuels have now been completely phased out (Figure 4).

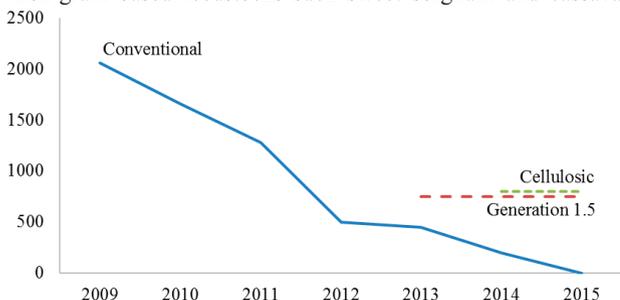


Fig. 4. Biofuel Subsidies (RMB/ton)

Source: Anderson-Sprecher & Ji (2015)

Bioenergy is part of China's long run strategic energy plan. The 12th Five-Year plan, which ended a year earlier, set a goal of producing 4 mln. tons of fuel ethanol and 1 mln. tons of biodiesel by 2015. China met the government goal for biodiesel, but fuel ethanol production in 2015 is only expected to reach 2,43 mln. tons (Table 3). While the 13th Five-Year Plan (2016-2020) is in the planning stage, the biofuel industry and some Chinese officials are already discussing new objectives for increasing biomass and biofuel production, including how to promote cellulosic and algae based biofuels.

Table 3

12th Five-Year Plan Target (2010 – 2015)

Biomass Electricity	13 mln. kilowatts capacity
Biomass Gas Annual Utilization	30 bln. cubic meters
Solid Biomass for Fuel Annual Utilization	10 mln. tons
Liquid Biofuels Annual Utilization	4 mln. tons of fuel ethanol and 1 mln. tons of biodiesel

Source: USDA FAS/GAIN Report: Biofuels Annual – China (2015)

In late 2014, the Chinese government approved a National Climate Change Plan (NCCP) that set out emission and clean energy targets for 2020. This plan is widely recognized and could potentially serve as a blueprint for biofuel objectives in the 13th Five Year Plan. The NCCP set a target of 130 bln. cubic meters of biofuel production by 2020 (Table 4). The 2020 biofuel targets are massively higher than current production levels, and it is unclear how the government intends to reach these targets (Anderson-Sprecher & Ji 2015).

Table 4

National Climate Change Plan (2015 – 2020)

Biomass Electricity	30 mln. kilowatts capacity
Biomass Gas Annual Utilization	44 bln. cubic meters
Solid Biomass for Fuel Annual Utilization	50 mln. Tons
Liquid Biofuels Annual Utilization	130 bln. cubic meters (No specifics on composition)

Source: USDA FAS/GAIN Report: Biofuels Annual – China (2015)

1 Ethanol

China is the third largest ethanol producer after the United States and Brazil. Six provinces (Heilongjiang, Jilin, Liaoning, Henan, Anhui, and Guangxi) have adopted an E10 blend mandate. The actual blend rate in these markets varies from 7-13 % according to industry sources. By regulation, each of the 7 fuel ethanol plants has a designated distribution market in one or several provinces. As of 2015, the mandated blend program fully covered 6 provinces and another 27 cities in five other provinces. Regulations require state petroleum companies in these provinces to purchase and blend set amounts of fuel ethanol from designated plants. The price of ethanol is fixed by the government at 91,1 % of the #93 gasoline ex-factory variable price.

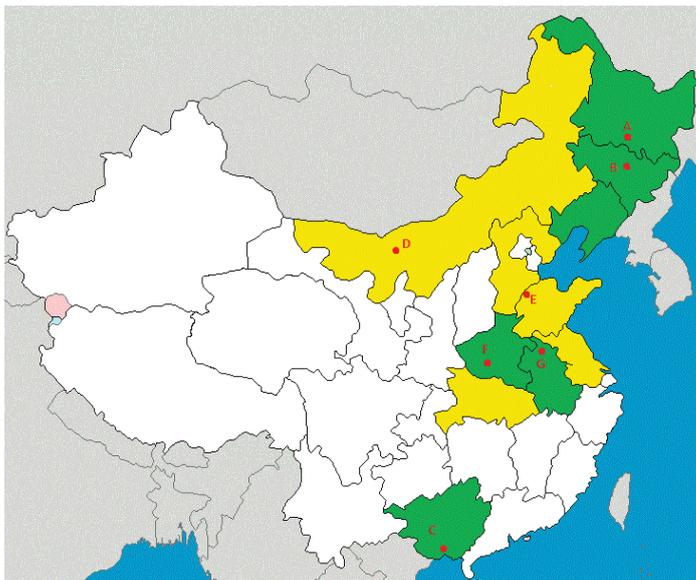


Fig. 5. The Blend Mandates and Ethanol Facilities in China

Source: Anderson-Sprecher & Ji (2015)

The Figure 5 presents a rough map of blend mandates and ethanol facilities in China. Provinces in heavy shade have province wide E10 mandates. Provinces in shade contain approximately 30 pilot cities with E10 gas mandates. The dots mark licensed fuel ethanol facilities (Table 5). The average blending ratio for ethanol gasoline is about 2,1 % in China as a whole. There are no plans to increase blend rates beyond E10, so future ethanol consumption growth will depend on growth in gasoline consumption or implementing E10 standards in additional provinces. If no significant policy change, both factors will gradually drive ethanol consumption higher.

Table 5

Licensed Ethanol Manufacturers

Symbol	Producer	Capacity (1 000 tons)	Feedstock	Ownerships
A	COFCO ZhaoDong	450	Corn, Wheat	COFCO
B	JILIN Fuel Ethanol	750	Corn, Wheat	COFCO + CNPC
C	COFCO GuangXi	400	Tapioca/Cassava	COFCO
D	ZTE Energy	80	Sweet Sorghum stalks	ZTE
E	ShangDong LongLive	80	Corn/cob	Private
F	COFCO Anhui	700	Corn/Cassava	COFCO
G	Henan Tianguan	750	Corn/Wheat/Tapioca/Cassava	ShouGang Group
Total		3 210		

Source: USDA FAS/GAIN Report: Biofuels Annual – China (2015)

The biofuel industry and some academic researchers are encouraging the government to adopt E10 as a national standard by 2020. However, the government is not expected to significantly expand blend requirements in the near term given its opposition to expanding grain-based biofuels and shortages of alternative feedstocks. In late 2014, the Ministry of Finance removed the Value Added Tax rebate of 17 % for grain-based ethanol production and imposed a 5 % consumption tax, further discouraging production (Anderson-Sprecher & Ji 2015).

1.1 Fuel Production

China's 2016 fuel ethanol production is forecast at 3,15 bln. liters, up 2,6 % from 2015 in response to increased fuel consumption in provinces with blend mandates. 2015 fuel ethanol production is estimated at 3,08 bln. liters. The mandated blend rate in designated provinces is 10 %; in practice the blend rate for ethanol in gasoline in these markets is between 7 and 13 %. The 11th Five-Year Plan (2006-2010) set goals for expanding non-grain based ethanol production, targeting cassava and sweet sorghum based production. The world's first cassava ethanol plant was built in Guangxi in 2007 with an original annual production capacity of 200 ths. tons. A sweet sorghum ethanol plant (50 ths. tons capacity) was completed in Inner Mongolia in 2012 by ZTE. China has seven licensed industrial scale fuel ethanol plants, using corn, wheat, cassava, and sweet sorghum and corn cobs (Anderson-Sprecher & Ji 2015).

1.2 Total Production

Total ethanol production (potable beverage, fuel, and other industrial chemicals) was estimated at 18 bln. liters in 2015. Official ethanol statistics are not broken out into beverage and industrial production, making it difficult to determine the exact mix. Based on available information, Anderson-Sprecher & Ji estimated that beverages and hard liquor accounted for 56 % of total ethanol production in 2015, or roughly 10,22 bln. liters. Industrial chemicals were estimated to account for 26 % of total production (4,69 bln. liters), while fuel ethanol was estimated to make up 18 % of production (3,08 bln. liters). There are a reported total of 160 ethanol plants nationwide using a variety of feedstocks such as grains (corn and wheat), tubers (cassava and sweet potatoes), and molasses. Sorghum can be used for bioethanol production in China, however, biofuel producers currently favor importing cassava over sorghum as a feedstock for biofuels. Corn and cassava are the main feedstocks, and currently account for 70 % and 25 % of production respectively. Molasses (from cane or beet sugar plants) accounts for the remaining 5 % (Anderson-Sprecher & Ji 2016).

Table 6

Ethanol End Use Estimates

Ethanol Prediction by End Use (mln. liters)							
Calendar Year	2010	2011	2012	2013	2014	2015	2016
Ethanol, Total	11,207	12,477	14,266	15,605	16,763	17,995	18,982
Fuel Ethanol	2,479	2,566	2,858	2,934	2,951	3,078	3,155
Ethanol – Conventional + Gen 1.5	2,383	2,479	2,724	2,735	2,721	2,835	2,906
Ethanol – Cellulosic	96	87	134	199	230	243	249
Ethanol, Other Industrial Chemicals	1,656	2,053	2,428	2,861	3,970	4,692	5,036
Ethanol, Beverage and Other usage	7,072	7,858	8,980	9,810	9,842	10,224	10,791

Source: USDA FAS/GAIN Report: Biofuels Annual – China (2015)

1.3. Trade

Imported ethanol is far cheaper than domestically produced ethanol due to high domestic corn prices. Imports have grown rapidly in recent years, although they remain small as a share of total consumption. In June, 2015 the price for domestic ethanol was RMB 5 541 per ton (\$892), whereas the average CIF price for imported ethanol was around \$570. Some market participants have interpreted growing imports as a sign of greater government acceptance of imports, although there have been no changes in regulations or official statements to this effect.

The tariff for denatured ethanol is 5 % for 2015. This tariff has been lowered in recent years (it was 30 % in 2009) to encourage additional imports of by-products and raw materials. Imports of denatured ethanol are only allowed to be used in the chemical processing sector. The government tightly controls fuel distribution and only designated ethanol producers and distributors are allowed to sell fuel ethanol for use in transportation. Designated distributors and producers do not appear to be explicitly prohibited from importing ethanol. However, sources note that registered distributors are cautious about importing significant quantities of ethanol without explicit government approval for fear of getting crosswise with government policy. The import tariff for undenatured ethanol remains at 40 %. A 17 % VAT and a consumption tax of 5 % are applied to imports of both denatured and undenatured ethanol. In 2012, China eliminated import tariffs for ethanol (undenatured and denatured) from 10 ASEAN countries, plus Chile, Singapore, Vietnam and Pakistan due to free trade agreements (Table 7) (Anderson-Sprecher & Ji 2016).

Table 7**Tax and Tariffs on Ethanol**

	Import Tariff Rate	VAT on Import	Consumption Import Tax	VAT Rebate on Export
Undenatured	40%	17%	5%	0%
Denatured	5%*	17%	5%	0%

Source: USDA FAS/GAIN Report: Biofuels Annual – China (2015)

China imported 56,86 mln. liters of ethanol in the first half of 2015. The largest supplier by far was Pakistan, which supplied 42,93 mln. liters of ethanol to China during this period. The next two largest suppliers were Vietnam and the United States at 8,62 and 5,14 mln. liters, respectively. Some of the import statistics include blends, so the pure ethanol content of imports is estimated lower. In addition, import duties are lower for fuel ethanol than for alcohol for human or industrial consumption; there are reports of some imported alcohol incorrectly being reported as fuel (Table 8).

Table 8**China Ethanol Imports**

Partner Country	Quantity (Unit in 1 000 L)					
	2010	2011	2012	2013	2014	2015 Q1, Q2
World	3 611	5 305	15 308	275	26 717	56 866
Japan	153	184	229	142	184	44
United States	44	30	31	32	26 310	5 145
Pakistan	0	1 973	7 854	18	59	42 938
Indonesia	3 004	2 943	0	0	0	0
Vietnam	0	0	4 995	0	0	8 624
Thailand	0	24	2 066	0	0	0
Others	411	151	133	83	164	115

Source: GTA (2016).

According to trade contacts, the fuel ethanol imported in 2014 was part of a trial to study the economics and trading channels for ethanol. The trial proved that imports are feasible and economically viable and the trial period for fuel ethanol has been extended to 2015. However, the government has been reluctant to change energy policy and regulations on biofuels despite the need for imported fuel and pressing air pollution challenges. Besides its policy of discouraging greater use of grain-based ethanol, the government is also worried that imports will hurt existing ethanol producers who have struggled due to high corn prices and weak demand. Government officials also cited concerns over possible price and supply volatility as a reason not to utilize imported ethanol (Anderson-Sprecher & Ji 2016).

2 Biodiesel

Biodiesel is only approved for fuel use in selected cities. There continues to be no national or provincial mandate for biodiesel usage due to limited production. In 2010, China removed a 5 % consumption tax to stimulate biodiesel production. However, biodiesel plants have struggled to become profitable and many small-scale operations have gone out of business. The biodiesel industry is currently operating at only 27 % capacity (Table 9). There are no available official estimates. The conversion rate for gasoline is 1,388 liters per ton; the conversion rate for diesel is 1,176 liters per ton. These are the rates used by China's Customs and Taxation Bureau. The conversion rate used for ethanol is 1,267 liters per ton; the conversion rate for biodiesel is 1,136 liters per ton. The annual growth rate for gasoline between 2015 and 2020 is estimated by Anderson-Sprecher & Ji at 5,66 % while the growth rate for gasoline between 2020 and 2025 is estimated at 2,1 %. The annual growth rate for diesel between 2015 and 2020 is estimated at 1,5 % annually while the growth rate for gasoline between 2020 and 2025 is estimated at 1,1 %.

Biodiesel production is estimated at 1,14 bln. liters (in 2015, mostly unchanged from the year before). Production is forecast to stay flat in 2016. Nearly all biodiesel in China is made from waste cooking oil. Biodiesel production almost doubled between 2010 and 2015 due in part to a government crackdown on the illegal use of recycled cooking oil for human consumption. The crackdown helped lower the cost and increase the supply of this feedstock. Biodiesel production capacity is estimated at 4,25 bln. liters, a 6 % increase from the previous year. The capacity utilization rate for the sector is estimated at only 27 % due to the lack of large scale collection channels for waste cooking oil. There are currently 54 biodiesel plants, but more than half of the producers have ceased production. After 5 years of net losses, the state-owned oil company China National Offshore Oil Corporation (CNOOC) decided to halt its biodiesel pilot project in

Hainan province. The NYSE listed Gushan Group also retreated from the biodiesel market in China after experiencing several years of heavy financial losses (Anderson-Sprecher & Ji 2016).

Table 9

Use Projections										
Calendar year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Fuel Use Projections (mln. liters)										
Gasoline Total	153,0	161,5	170,4	179,9	189,8	193,8	197,9	202,1	206,3	210,7
Diesel Total	211,0	214,2	217,4	220,7	224,8	227,4	229,9	232,5	235,1	237,8
On-road	159,3	165,3	171,5	178,0	184,7	190,7	196,9	203,3	210,0	216,8
Total Fuel Markets	364,1	375,7	387,8	400,5	414,7	421,2	427,8	434,6	441,4	448,5
China Gasoline Use Projection (mln. liters)										
Gasoline	149,9	158,3	167,1	176,5	186,4	190,3	194,3	198,4	202,6	206,8
Fuel Ethanol equivalent	3,2	3,2	3,3	3,3	3,4	3,5	3,6	3,7	3,8	3,9
Total Gasoline	153,0	161,5	170,4	179,9	189,8	193,8	197,9	202,1	206,3	210,7
China Diesel Use Projection (mln. liters)										
Diesel	209,7	212,9	216,1	219,3	222,6	225,0	227,5	230,0	232,5	235,1
Bio Diesel equivalent	1,3	1,3	1,3	1,3	1,4	1,4	1,4	1,4	1,5	1,5
HVO equivalent	0	0	0	0	888	941	998	1,058	1,121	1,188
Total Diesel	211,0	214,2	217,4	220,6	224,8	227,4	229,9	232,5	235,1	237,8

Source: USDA FAS/GAIN Report: Biofuels Annual – China (2015)

Note: Projections are based on projected GDP growth trends and increasing energy efficiency.

Two key challenges biodiesel producers face in China are competition for waste oil and restricted sales channels. While the government has sought to crackdown on misuse of waste cooking oil (also known as ‘gutter oil’), illegal food use remains a problem due to very high profit margins of around 150 to 240 %. This creates heavy competition for this waste stream product, making it more difficult for biodiesel facilities to obtain feedstock at an affordable price. In addition, state owned oil companies block biodiesel from being sold to most consumers. China National Petroleum (CNPC) and SinoPec, which control over 90 % of gas stations in China, do not sell biodiesel. This forces biodiesel producers to sell to oil brokers or sell directly to end-users. As a result, most biodiesel for road transportation is sold at private gas stations in small cities or in the countryside. About 30% of biodiesel production – in the on-road transport sector. An additional 50 % is used in the industrial sector, and 20 % is used for agricultural machinery and fishing boats.

Overall diesel use in the transportation sector is estimated at 150 bln. liters for 2015, up 6 % from the previous year. Diesel for transportation accounts for 71 % of total diesel use. Total diesel total use for all sectors is estimated to have fallen 2 % in 2015 due to lower diesel use for utility vehicles. Biodiesel production only accounts for 0,2 % of total on-road diesel use. The government is unlikely to set any mandates for biodiesel use in transport fuel in the near future given the limited scale of biodiesel production at this time (Anderson-Sprecher & Ji 2016).

Biodiesel imports are estimated at 150 mln. liters in 2015, up 50 % from the year before due to large purchases of Indonesian biodiesel by a Chinese state owned petro company. Imports of biodiesel and mixtures thereof surged in 2013 and 2014 due to the elimination of a 0,8 RMB per liter consumption tax on biodiesel imports starting in 2013. Imports of petroleum oil containing up to 30 percent biodiesel also surged in 2013 as a result of the elimination of the consumption tax for biodiesel, with imports jumping from 101 000 liters in 2012 to 2,5 mln. liters in 2013. Trade contacts reported that most imports under this tariff line had very low biodiesel content (around 1-2 %) and that this was added in order to avoid consumption taxes. The government cracked down on this practice in 2014, and imports under this tariff line have fallen rapidly as a result. As many of the tariff lines include blends, the estimated total volume of pure biodiesel is estimated at far lower than the sum of the tariff lines below (Table 10).

Table 10

Tariff and Taxes on Biodiesel Trade			
	Import Tariff Rate	VAT on Import	VAT Rebate on Export
Biodiesel and mixtures	6,5%	17%	0%
For biodiesel from ASEAN countries, the Tariff rate is zero since 2012			

Source: USDA FAS/GAIN Report: Biofuels Annual – China (2015)

Vehicle and Fuel Use

The number of civilian vehicles in China reached 145 mln. units in 2014, up 12,4 % y-o-y, according to China National Statistical Yearbook data. Passenger vehicles in 2014 reached 123 mln. units, up 15,5 % year-on-year. On average, China added 11 mln. civilian vehicles annually for the past 10 years. There are 31 cities that have over 1 million passenger vehicles and 9 cities have over 3 million passenger vehicles (CNSY 2015). Vehicle sales growth has slowed as China's economy has decelerated. The Association of Automobile Manufacturers estimated that vehicle sales in 2015 grew by 7 % in 2015, down from 12,4 % growth in 2014 and 16,6 % growth in 2013. Q1 2015 car production and sales were 8,28 million and 1,99 million respectively. Production increased 4,1 % y-o-y, the lowest growth rate in the past 2 years, and Q1 sales only increased 2,8 %. Sales of utility vehicles and buses fell sharply, contracting by 18 % and 19 % y-o-y, respectively.

Replacing potential demand for ethanol, the government encourages the purchase of electric vehicles and other 'new energy' vehicles to reduce fossil fuel use and improve air quality. In July, 2014 the State Council eliminated the purchase tax for new energy vehicles. New energy vehicles were required to account for 15 % of government vehicle purchases in 2014 in Beijing, Tianjin, Hebei, Yangtze River Delta (Shanghai region) and Pearl River Delta (Guangzhou region) as part of a campaign to tackle heavy air pollution in these regions. For all other government agencies and institutions, new energy vehicles were required to account for at least 10 % of new vehicle purchases in 2014. These requirements increase to 20 and 30 %, respectively, for 2015 and 2016 (CAAM 2016). Total diesel consumption in 2015 is estimated at 207,6 bln. liters, while gasoline consumption is estimated at 145 bln. liters. USDA forecasts that gasoline consumption will expand by 5,6 % for the next 5 years due to slower but still robust passenger vehicle sales growth. Diesel consumption is forecast to expand more slowly at 1,5 % during this period. There are no official growth projections for fuel use.

Advanced Biofuels

The Chinese government has set an ambitious target of producing 300 mln. tons of cellulosic and non-grain based ethanol combined by 2020. However, challenges in collecting and transporting feedstock from China's small-scale farms combined with slow progressed cellulosic technology hinder Industrial process of cellulosic ethanol. Industry experts Anderson-Sprecher & Ji predict China could produce 10 mln. tons of cellulosic ethanol by the target date. State-owned enterprises dominate the cellulosic ethanol market due to their strong access to capital and government support. The state-owned enterprises currently engaged in cellulosic ethanol are China National Cereals, Oils and Food Corporation (COFCO Group), China National Petroleum Corporation (CNPC), China Petrochemical Limited (SinoPec), and China National Offshore Oil Corporation. Private companies are not eligible to receive government incentives or subsidies. Therefore, it is almost impossible for private company to enter this market.

Future Prospects

Development of biofuels in China depends on positive public policy frameworks and incentives such as mandatory targets for biofuel use and fiscal incentives that favour biofuels relative to fossil fuels until the industry matures. This is in the public interest when biofuels are produced from local sources since they create employment and wealth in the country. Governments should also provide investment incentives including: income tax credits for small biofuel producers, financing bioenergy plants, increasing farmers' participation through matching grants, and reducing business risk for the adoption of new technologies. Support for R&D, particularly for small-scale technology and enhancing the energy potential of indigenous plants, is crucial (FAO 2008). Further research and development are needed in China in order to avoid competition between food and fuel uses of certain crops and also to get the right signals regarding the development of biofuel production worldwide. Therefore, bridging the knowledge gap on biofuels through information dissemination and capacity building programs to support farmers in developing ownership of the value chain are of utmost importance.

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Comparative Analysis of International Investment Processes in the USA and China

BOGDAN KUZ'MENKO¹⁵

Abstract: The article analyses the main forms of investment in the United States and China and their role in promoting economic growth. The dynamics and structure of inflows and export of capital investment in these countries have been analyzed. The key aspects of the investment attractiveness of the United States and China have been studied. Special attention is paid to bilateral investment ties between the United States and China.

Keywords: International investments • The United States • The People's Republic of China • Investment attractiveness • Investment trends • Foreign direct investment

Introduction

Investment is an important component of economic life, since it promotes the effective and successful development of any economy. Modern economy is based on the investments that integrate the interests and resources of individuals, companies and the states with regard to social and economic development.

The first massive international capital flows appeared in the XIX century. European countries were the main capital exporting countries, and North America was the main capital recipient. In 1913, Great Britain's share in the capital export was 43% of all foreign investment, France's – 20%, Germany's – 13%, and the United States' – 7% [1].

At present, the international investments represent the key element of international economic relations. The foreign investment issue is of particular concern for the world economy 'giants' – the United States of America and the People's Republic of China, since the United States' participation in the international investment is volatile, and the People's Republic of China has been gradually increasing its role over the past decades. This determines the relevance of this research topic.

Previous Research Review

Many academics focus on the study of international investments. Such foreign and national academics as J. A. Schumpeter, J. M. Keynes, L. Gitman, J.I. Lee, M. M. Jonkta, D.R. Henderson, R. Kimball, T. Havranek, O. Baranovsky, M. Demyanenko, L. Dovhan, V. Novak, S. Reverchuk, T. Mayorova, G. Hrytsyuk, A. Peresada, S. Fedorenko and others made significant improvements in this area. Particular attention should be paid to the study of foreign investment providing technology to the companies, performed by T. Havranek and Z. Irsova. They state that the countries open to international investments obtain more technologies [2]. According to J. Schumpeter, the investment in fixed assets is a driving force of prosperity. He notes that the investment promotes the innovative industries' development [3]. John Maynard Keynes in his study, highlighted the issues of attracting foreign investment [4, p. 1]. Study of international investment processes in the United States was performed by R. Kimball et al., who analyzed the role of foreign investment in the economy of the country and its investment attractiveness [5]. Analysis of investment climate and ability of China to attract investment was performed by J. I. Li [6].

¹⁵ 4 year student of a study program "International Economic Relations" of the Institute of International Relations of Taras Shevchenko National University of Kyiv.

Research Supervisor: Associate Professor, Ph. D. Chugaiev O.A.

Unsolved Part of the Problem

Structural changes in the global economy require new studies which have to consider modern post-crisis international capital trends.

Object of this study is the economy of the United States and China.

Subject of this study is international investment relations of the United States and China with other countries.

Main goal of this study is determination of modern international investment trends in the United State and China.

The Main Results

Investment means the use of financial resources in a form of long-term capital flows. Depending on the sources, there are two types of investment: domestic (inside the country) and foreign (international) [7].

International investment is the investment involving entities of different countries (residents and non-residents with regard to a certain country) [8, p. 18].

There are two main forms of foreign investment [7]:

- foreign direct investment (FDI is the investment into foreign companies ensuring the control over the object of investment);

- foreign portfolio investment (FPI is the investment into foreign companies or securities that bring income to the investor and provide no power of control over a company).

Foreign investments are intended to facilitate economic development of a country by increasing its production volume, budget revenues, exports, reducing imports, and improvement of qualification skills of employees [9].

Factors promoting the attraction of foreign investment include the following [10, p. 452; 11]:

- internal political stability;
- market reforms;
- economic legislation stability;
- guarantees of inviolability of private property and foreign investment;
- favourable foreign economic environment;
- long-term market potential.

Today, the United States and China are the main players on the global capital market.

The history of the United States' activity on the global capital market should be studied. At the beginning of the XVIII century, the country was an importer of capital that was allocated mainly to railroad construction. Only from the end of the XIX century, the United States became known as the capital exporting country [1]. In 1920s, the United States was the main investment exporter.

Particular attention should be paid to the fact that the Great Depression of 1929-1933 affected the foreign investment. It should be also noted that Germany suffered from the significant outflow of American capital, which resulted in major deterioration of economic situation in the country [12].

In 1934 the United States became the capital importer again due to consequences of the crisis mentioned above. However, in the 1940s the United States became the capital exporter again (due to World War II). Starting from that period the United States have become the leading capital exporter: in 1960 the aggregate amount of direct private investment (DPI) of the United States was \$ 32.8 bln, and in 1973 – \$ 107 bln. The Americans invested mainly into highly developed industrial economies [1].

Currently, the United States holds its position of the leading investment exporter. In particular, the amount of cumulative FDI of the United States into the countries of the world was \$ 3,102,418 mln in 2008, and \$ 6,318,640 mln in 2014 [13].

It is worth noting that the annual decline in the USA capital export was observed in 2008-2010 (\$ 308,296 mln, \$ 287,901 mln and \$ 277,779 mln respectively), its value increased to \$ 386,724mln in 2011, and during 2012-2013 it decreased again to \$ 366,940 mln and \$ 328,343 mln respectively. In 2014, this indicator was \$ 336,943 mln. In our opinion, this was due to volatility of global economic relations destabilized due to the Great Recession (2008-2009) [13].

As for the capital inflow to the United States, it is worth noting that starting from 1997 (the inflow of investment over \$ 100 bln took place in 1997 for the first time), the peak of FDI inflow (\$ 314,007 mln) was observed in 2000. The lowest inflow was \$ 53,146 mln in 2003, which, in our opinion, was due to volatility of the global economic system, investors' reorientation to the developing countries, terroristic attacks and the start of Iraq War. In 2008, there was rather high inflow –\$ 306,366 mln. However, the decrease to the amount of \$ 143,604 mln was observed in 2009, which, in our opinion, was caused by the Great Recession. FDI inflows increased in the following two years (\$ 198,049 mln in 2010, and \$ 223,759 mln in 2011). However, there was a decrease in the inflow to the amount of \$ 160,569 bln in 2012, and slight growth in 2013 to the amount of \$ 187,528 mln. The capital inflow was only \$ 86 bln in 2014. As for December 31, 2014, the amount of cumulative foreign direct investment in the United States amounted to \$ 5,409,884 mln [13].

The Netherlands (\$ 39bln), Japan (\$ 34bln) and Switzerland (\$ 24bln) were the largest investors in the United States economy in 2014. Europe had the largest amount of cumulative investment in the United States among the regions of the world as for the end of 2014 [14].

It should be noted that the United States manufacturing sector is the first in terms of cumulative investment. Therefore, at the end of 2014 it attracted \$ 1,046 bln of foreign direct investment [14]. On average 39.2% of all investment were made into this sector annually during 1999-2009. In 2010-2012 the average share of all investments into the manufacturing sector was 45.4% [15].

Structure of cumulative investments, %

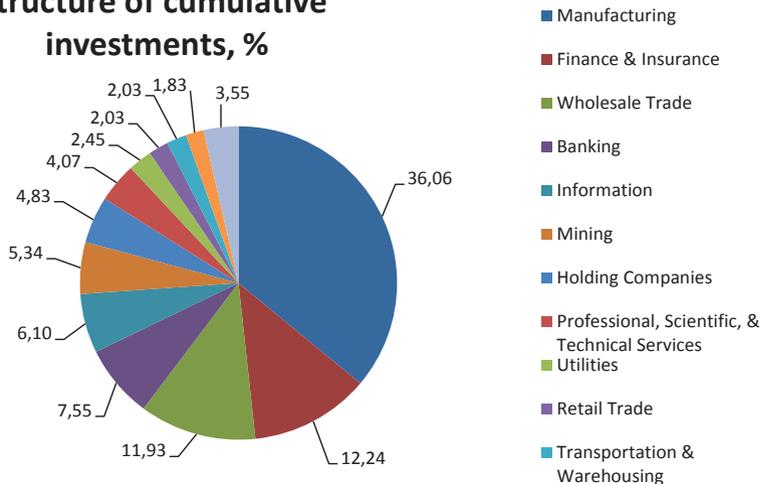


Fig. 1. Structure of cumulative investment as for December 31, 2014, %

Source: Drawn up by the Author according to [14].

Finance and Insurances ector (\$ 355 bln) was the second sector to receive the largest amount of cumulative investment as for the end of 2014. But this sector of the US economy experienced a decrease in the cumulative investment in 2014 as compared to 2013; capital inflows into banking and information sectors also decreased by 17.35% and 15.82 % respectively. Wholesale trade sector increased in cumulative investment by 5.17%.

The US investment attractiveness is conditioned by the following advantages [15], [16]: liberal investment regime, strong economy and existence of different markets, highly-qualified personnel, leading world research institutes, stable regulation, developed infrastructure, the largest financial market, the best conditions for investment into innovative sectors of economy, almost absence of restrictions of the rights of ownership, and a wide choice of property items. Disadvantages include the following [17]: taxation system weakness, heavy government debt, growing government intervention, and restrictions of direct investment into defense sector.

Although industrially advanced countries represent the basic source of FDI in the United States, the developing countries have been gradually increasing their share in the total FDI amount. The average FDI

from the People's Republic of China during 2010-2012 was \$1 bln (in 2005 it was \$ 146 mln) – 0.5% of the total amount of FDI in the United States; Brazil – \$ 1.9 bln (in 2005 – \$ 985 mln) – 1% of the total amount of FDI in the United States. But during 2012-2014, inward investment in the US from China and Brazil decreased significantly – from \$3,415 mln to \$968 mln and from – \$202 mln to \$468 mln (desinvestment) respectively [14]. Historically, the investment flows from the developing countries into the United States were constrained by the lack of financial resources, poor awareness of the American market, etc. However, the situation has been changing. Certain developing economies, such as China, Taiwan and Brazil accumulated large foreign reserves due to trade surplus [18].

In recent years, China investment export and import have been growing rapidly. In addition, the state becomes the capital exporter, not just capital recipient: investment export increased by 14.1% in 2014 as compared to 2013, while the capital import increased only by 1.7% [19].

As for the Chinese investment export, it should be noted that this process started only in 1982. Unlike the United States, no decrease in annual Chinese investment flows was observed in 2009-2010 and 2012-2013 as compared to 2008 and 2011 respectively. The decline was observed in 1999-2000. The most significant increase in the investment export was in 2008 as compared to 2007. Then this indicator increased by 110.9%. Increase in this amount was observed from 2010 to 2014. Note that income from foreign projects invested by the Chinese increased by 7.3% in 2014 as compared to 2013. Chinese investors obtained the largest amount of revenue from Asia and Africa, but the largest increase was due to projects in Europe and Latin America. Besides, Chinese companies made the largest investment into the following sectors: electronics, mining, and agriculture in 2014. These corporations focus on obtaining new technologies, management skills, etc. [20].

History of capital inflow to China evidences that the country was a leader in attracting investment. As for December 31, 1913, 3.2% of all investments of Great Britain, the leader in investment export at the time, accounted for China [21]. Significant funds were not invested into this economy until 1980. According to UNCTAD, during 1970-1979 less than \$1 mln was invested annually. We think that foreign investment inflow started in 1980 due to economic system reformation that began in 1978. Annual investment inflow exceeded \$ 100 bln in 2008 for the first time; however, it was \$ 95 bln the next year due to negative impact of the Great Recession of 2008-2009. In 2010, this value rose to \$ 114,734 mln. This figure remained practically the same during 2011-2014. It is worth noting that as for December 31, 2013, the amount of all cumulative investment in China was \$ 956,793 mln and as for December 31, 2014 it was \$ 1,085,293 mln [13].

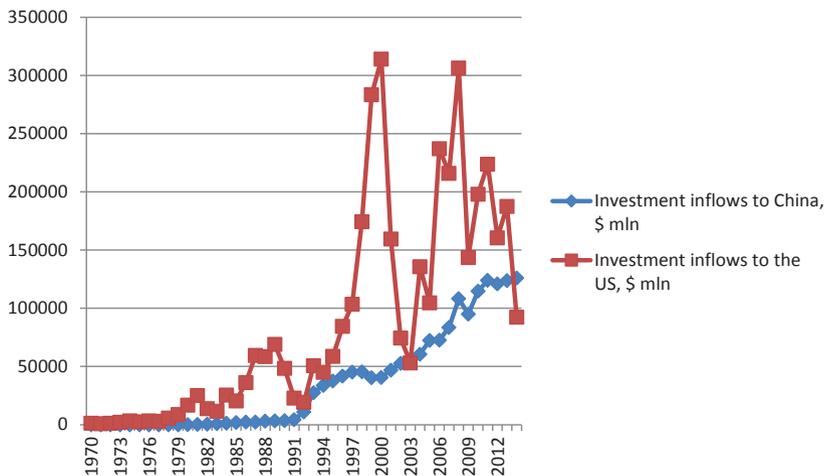


Fig. 2. Investment inflows to the United States and China, \$ mln

Source: [13].

Investment attractiveness of the People’s Republic of China is driven by the following advantages [17]: openness of economy to foreign investment, stability of national currency and economy as a whole, relatively low inflation rate, equity market access, and a large financial market. Disadvantages include the following [17]: state control over the financial sector and land distribution, relatively low level of intellectual property protection, judicial system weakness, and different investment import and export regulations in the regions of the country.

The biggest investors in China during 2014 were: Hong Kong (70.56% of all investment), Singapore (5.17%) and Taiwan (4.51%)¹⁶.

In recent years, the sector of services has been the most attractive for investors in China, which attracted \$ 48.6 bln in the first 9 months of 2014. That was 8.7% more than during the same period of 2013. In the first three quarters of 2014 the inflow of investment in the manufacturing sector fell by 16.5% and made \$ 29.6 bln compared with the same period in 2013. Figure 3 shows the structure of the amount of the accumulated investment by sectors.

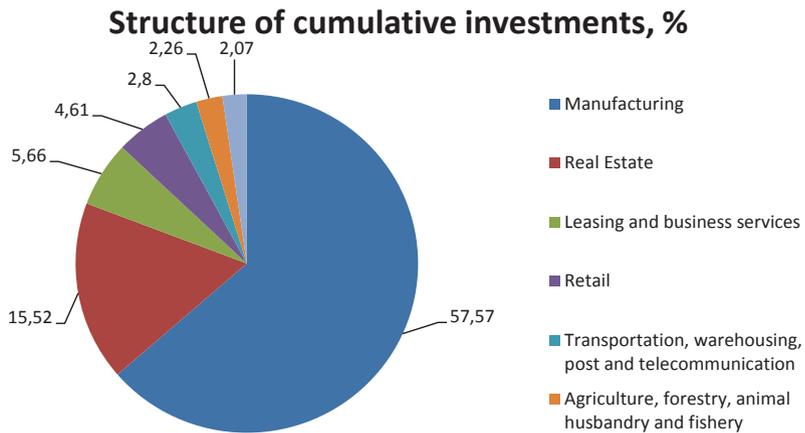


Fig. 3. Structure of accumulated investment in China, 2013

Source: [22].

It is also worth noting that in 2014 the Chinese Government considered foreign investment in the infrastructure of the country as one of the most important measures to improve economic growth. For the sake of this, appropriate measures were taken. In addition, investment attractiveness of Central China is growing which is very important for the economic development of the country.

Special attention should be also paid to US– Chinese investment cooperation. After 5 years of rapid growth, in 2013 Chinese annual inflow of FDI in the United States exceeded the flow of American FDI to China [13]. In addition, in 2012 the United States was the second largest, and in 2013 – the third biggest importer of Chinese capital after Hong Kong and the Cayman Islands [23]. According to the China Investment Monitor in 2014 the United States is the largest importer of capital from mainland of China [24]. According to MOFCOM (Ministry of Commerce of People's Republic of China) in 2007, the total amount of Chinese investment in the United States was \$ 1.9 bln and increased to \$ 17.1 bln in 2012 [25] (according to the China Investment Monitor this indicator was \$ 15.7 bln by the end of 2015 [24]). In 2015 the Chinese mostly invested in such sectors of the US economy as [24]: real estate & hospitality, financial and business services, energy, automotive industry, and ICT.

In our opinion, these investment flows are beneficial for Americans: in addition to creating new jobs they promote a more competitive consumer market and have the potential to be one of the main reasons for strong US-Chinese relations.

¹⁶Calculated by the author using the data from [25].

As for the inflow of investment from the United States to China, the trends in recent years indicate that it decreased each year. According to MOFCOM, the peak of the inflow of such investment took place in the early 2000s and was \$ 5-6 bln annually. In recent years the same flow on average was \$ 2-3 bln every year [25]. However, despite this the total accumulated American investment was little more than \$ 60 bln in 2013 that considerably surpassed the 2000 level [26]. It is worth noting that during 2009-2014 the United States was the fifth largest exporter of capital to China. As of the 31st January, 2016, the U.S. was the third largest exporter of capital to China [25].

Inflows of U.S. investment in China, \$ bln

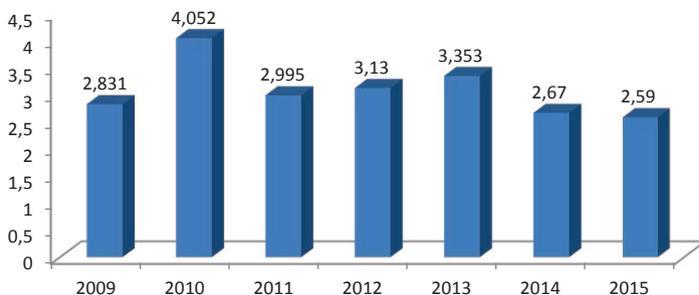


Fig. 4. The inflow of American investment to China, \$ bln

Source: [25].

The inflow of investment from China to the United States is growing every year, while the reverse inflow of investment from the United States to China has decreased in recent years compared with the beginning of the 2000s. In our opinion, the reason for such trends lies in difference of these economies: while in the United States some sectors are completely open, in China they are completely closed (see Figure 5).

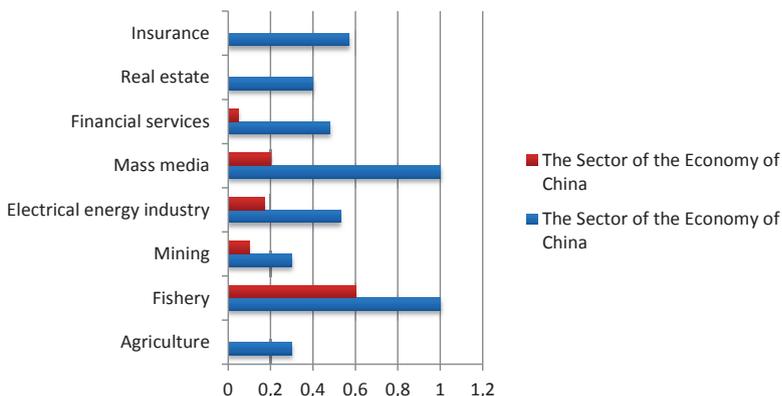


Fig. 5. Openness of the sectors of the economies of the United States and China; 0 – full openness, 1 – complete isolation

Source: [26], [24].

Conclusions

In 2014 China won the title of the first largest importer of capital, though this title for many years had belonged to the United States. This happened as a result of stable growth of investment flows to the People's

Republic of China and the unstable international investment in the United States of America. Despite this, the gap in the amount of accumulated foreign investment in the United States and China remains large enough.

Analysis of bilateral investment data demonstrates that the inflow of American investment to China has fallen twice in comparison with the beginning of 2000s. Chinese investment to the United States of America has tended to grow.

In our opinion, despite the declining investment imports, the United States will remain an attractive destination for foreign capital. China is currently feasible to improve policies to attract investment and liberalize the investment regime, but because this country's economy openness is considerably lagging behind the American.

As for predictions for the coming years, we believe that the competition for largest importer of international investment will be between the United States and the People's Republic of China.

Further research can quantitatively assess the factors of international investment of China and the United States and check further trend stability.

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Development of Rare-Earth Industry in Russia

TATIANA YAROSH¹⁷

Abstract: This research is devoted to the analysis of the use of rare elements and rare-earth metals and their production in Russia and around the world. The paper also discusses ways of investing in the development of the sector of mining and processing of rare earth elements.

The relevance of this study lies in the fact that at the moment the rare earth metals are a key resource to the innovative development of any country. Rare-earth materials, with biggest deposits in China and Brazil, are widely used in many fields and industries. To date, almost all the technologies and technical devices work due to rare earth metals.

Basic Results of the Research

Rare earths are a small group of only 17 elements. All of them are silvery-white substances. The group of rare earth metals includes the following substances: scandium, yttrium, lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, and lutetium.

Rare earth metals (REM, REE) have rare physical and chemical properties used in various high-tech industries. You can determine the level of scientific and technological development of an industry by its volume of used rare earth metals [3].

The opinion that REM are rarely found in the earth's crust is erroneous, since for they are superior to lead, tungsten or copper in total prevalence. However, their concentration in the ores is very low. This is due to their chemical properties. Almost all members of the group are characterized by +3 oxidation degree.

It should be remembered that the oxidation degree is an imputed. It value has no physical meaning, but shows the formation of chemical bonds between atoms and their interactions in the molecule. The oxidation degree with + sign means that when connecting electrons of the material shift to other substances. In the reaction of rare earths with other substances, oxidation occurs, forming persistent, water-insoluble oxides, hydroxides.

Rare earth elements are widely distributed in the earth's crust. There are more than 250 known minerals which include rare earth elements. The most common substance in the earth's crust is cerium. Compared to other metals, thulium and lutetium are the rarest [3].

However, due to their chemical properties rare earth elements are difficult to obtain, because they are contained together with other substances. It is impossible to extract or to obtain concentrated pure rare earth metals. Typically 3-7% concentrates are prepared.

Rare earth elements are used in industry and new high technology. For a long time, rare earth metals were considered chemically uninteresting. The situation changed when, in 1960-s, technologies were able to obtain pure metals of this group. To this day, the properties of rare-earth materials are of great interest for the industry.

One of the main features of production and consumption of rare earth elements is the fact that consumption of these metals increases with each passing year since REMs find application in new areas of production. Let us consider in detail the use of 17 rare earth elements in the industry (Table 1).

¹⁷ 4 year student, Department of Economic Theory, Institute of Economics and Management of Industrial Enterprises of the National University of Science and Technology MISiS.
Research Supervisor: Doctor of Economics, Professor A.F. Leshchinskaya.

Table 1

The use of rare-earth metals [1]

№	REM	Application
1	Scadium	Superhard and refractory materials, aerospace and nuclear technology, microelectronics, energy saving lamps, healthcare, solar panels, laser materials, MHD-generators, X-ray mirrors, radio-electronic industry, manufacturing fianites, phosphors
2	Yttrium	Yttrium ceramics, refractory materials, thermoelectric materials, superconductors, aerospace, magnetic materials, phosphors (production of colour TV picture tubes)
3	Lanthanum	Lenses, oil refinery, electrodes, included in batteries, phosphors
4	Cerium	Metallurgy, catalysts, thermoelectric materials, glass and ceramics, medicine
5	Praseodymium	Superconducting materials, magnets, lasers, incandescent lamps.
6	Neodymium	Modification of high-quality steel, manufacture of powerful permanent magnets, seed processing, manufacture of neodymium glass, magnets, lasers.
7	Promethium	Nuclear batteries, additives to radio phosphors, production of radioisotope power sources.
8	Samarium	Magnets, thermoelectric materials, nuclear power, glass, refractories, production of colour TV sets and cell phones, microelectronics, lasers
9	Europium	Nuclear power, nuclear-hydrogen energy, laser, electronics, phosphors, medicine, energy-saving lamps
10	Gadolinium	Electronics, nuclear power, magnetic media - computer memory, lasers, superconductors, medicine, production of special titanium alloys
11	Terbium	Magnetic materials, thermoelectric materials, phosphors, electronics, manufacture of computers, lasers
12	Dysprosium	Metallurgy, nuclear power, thermoelectric materials, electronics, magnets, lasers, light sources
13	Holmium	Metallurgy, lasers, thermoelectric materials, nuclear power
14	Erbium	Lasers, vanadium steel
15	Thulium	Magnetic data carriers, laser materials, thermoelectric materials, nuclear power
16	Ytterbium	Lasers, thermoelectric materials, magnetic materials, nuclear power, electronics
17	Lutetium	Laser materials, magnetic materials, information carriers, heat-resistant conductive ceramics, nuclear physics and power engineering, metallurgy.

The main areas of consumption of rare earth in the world is the production of catalysts, glass, ceramics, phosphors, growing artificial crystals, optical fibers, microwave filters, as well as ferrous and non-ferrous metallurgy, nuclear industry and electronics [7].

As you can see, REMs are mostly used in everyday technology like computers, smart phones, cameras, batteries, hard disk drives, monitors, hybrid and electric vehicles, CD, DVD, refrigerators, washing machines, air conditioners, and wind turbines. REMs are used in medicine, nuclear power, electronics and military equipment, thus increasing the importance of mining, processing and use of rare metals in the global economy.

The significance of rare earths in industry is large and is a guarantee of economic security. Their ability to lend materials new characteristics makes their production a promising direction of development, which will ensure the development of other sectors of the economy. Governments in many countries are thinking about reducing the import of these metals from China. With 35.4% of world reserves (as of 2014) China controls about 95% of the world market due to low prices for concentrates of rare-earth metals and rare-earth products. In 2010, Beijing imposed an embargo on exports and prices have increased significantly [2].

In early 80s China discovered a new field of rare earth metals Bayan Obo. The Chinese government supported the new industry development and increased its volumes of production, processing and export of raw materials and manufactured goods, including REM. As a result, by 2000, China took the leading position in the industry becoming the largest supplier of rare earth ores and intermediate raw materials.

With the increasing supply of rare-earth metals on the global market from 2000 to 2005, prices for concentrates and by-products fell by 2 - 4 times. This had a negative affect for most companies. The net cost of mining and ore refining is high, so many firms were unable to withstand the competition and were forced to curtail their production.

China has formed a powerful rare-earth industry due to Government regulation and attraction of foreign investments and capacities. This forces the rest of the world, with only ruined companies and not as powerful assets, to depend on China.

Every year China recovers more than half of the REM total amount produced worldwide. It is about 100 tons of pure rare earth metals. Bayan Obo has the main part of natural REM resources of China. In addition, this deposit is by far the main source of rare earth raw materials in the world. [2]

China, as a monopolist in the ore mining market, has long conducted an effective policy of technological improvement of REM production, thus changing the structure of ore exports to the world market. In 1970s China exported ores and concentrates, in 1980s they sold the chemical compounds of mixed REMs (carbonates and chlorides). At the beginning of 1990s separated rare metals (oxides, metals) were exported. In the late 1990s the converted REMs (phosphors, magnets) were exported. In 2000 they began to sell finished products using rare earth metals (wind generators, electric motors, computers, navigators). And even in spite of the change in proposal REM-product demand has not reduced in the global market [9].

However, the mining of rare ores is polluting activity and ore, as well as any mineral, is a limited resource. Therefore, the Chinese Government has gradually reduced the proportion of the rare-earth exports to the market, thereby triggering a rise in prices.

In 2006, the cost of rare earth raw materials increased by 30-60% due to 10% reduction of licenses for export from the country.

In 2007, the cost of export license was increased and 10% export duties on rare-earth metals were introduced.

In 2008, export tariffs increased to 15-25%.

In 2010, China cut export quotas by 72%.

In 2011, they were reduced by another 30%.

In order to ensure environmental safety, conservation and rational exploitation of mineral resources the Chinese Government introduced severe quotas on mining ores containing REM in 2010. In 2011 accepting applications for rare earth mining was suspended.

By the end of 2014, China planned to cease the export of rare earth metals.

However, according to China Customs Information Center volumes of rare earth metal exports in 2014 increased by 66.1% and amounted to 10,154 tons for the first 4 months. In 2014, China approved export quotas of rare earth metals at 15,110 tons reducing it by 15,449 tons in comparison with the same period last year.

Being a major supplier of the world's raw materials and rare-earth output, China has increased the profitability of rare earth industry after acquiring full control of the market and its conditions.

The leading consumers on the rare metal market understand their dependence on China's policy and are concerned about the state of affairs. So measures have been recently taken to rebuild the industry in their respective countries, as the situation affects not only industry development, but the national economic security.

Many countries have already carried out actions aimed at finding new deposits, developing the discovered fields, and restoring production capacities. And much effort has been aimed at developing conditions for a new technological order.

China has the world's largest reserves of rare metals. Russia is the second and has 17% of world deposits or 19 million tons of rare earth metals. Russia accounted for about 2% of global production of rare earth metals in 2013 [5].

In Russia the rare earths occur in the loparite field at Kola peninsula. The largest deposits are Tomtor, Chuktukon, Pavlovsk and Lovozero deposits. Also, Russian Katugin deposit contains ore rich in yttrium. Among CIS countries, stocks of rare earths are in Kyrgyzstan in Ak-Tyuz deposit [3].

There are about 300 deposits of rare metals located in the 7 districts in Russia (Far East Federal District, Volga FD, Northwest FD, Siberian FD, Ural FD, and Central FD). Also, there are many companies in 36 regions of Russia engaged in mining, ore cleaning and sale [3].

Russian REM imports, compared with other countries', take middle positions and are hardly represented in the segment. The Government does not leave rare earth industry unattended because it has huge potential for growth [5].

Both public sector and private investors are preparing to develop the industry, as the development of the industry based on public-private partnership model. It is expected that private investment will gradually replace budget provisions.

Since extraction and production of rare earth metals is considered as a strategically important industry over the past few years, which will make it possible to introduce innovation in material engineering, the state program of REM development has been implemented in Russia since 2013. The Russian Government approved a program of Ministry of Industry and Trade of Russia from 05.05.2014 N839 “On Approval of Strategy of Russia's Steel Industry Development for 2014 - 2020 and up to 2030 and Russia's Non-ferrous Metals Development Strategy for 2014 - 2020 and until 2030”, which will create an entire industry to supply necessary raw materials for space, aviation, nuclear industry and electronics [7].

Industry and Trade Minister Denis Manturov is sure that this will create a full production cycle from mining and enrichment of rare-earth metals to the final market product. Big investors and state-owned corporations like "Russian Technologies" and "Rosatom" show great interest in this program.

In 2014 the Government of the Russian Federation approved subsidies for compensation of interest rates on loans for investing in mining and production of rare earth metals. The state budget provisions for these purposes are 11.2 million rubles in 2014, 133.3 million rubles in 2015, and 590.8 million rubles in 2016.

Any companies that pass the competition and work in the field of rare and rare earth metals can claim for subsidies. The competition is organized and controlled by Ministry of Industry and Trade.

The State Program has Subprogram 15 “Development of Industry of Rare and Rare Earth Metals.” The Subprogram has steps and timing. During the first stage, which lasts until 2016, the scientific technical blueprint in the industry should be created. During the second phase, which will last from 2016 until 2020, it is planned to establish industrial production [6].

The first phase is aimed at technology development. In 2015 Industry and Trade Minister Denis Manturov said: “Today, 40 R & D projects are being implemented, some of them have already been completed. The Government is committed to implement the results of R & D”.

By the end of the second stage in 2020 it is expected to reach the level of sales on the basis of rare earth metals in the amount of about 50 billion rubles in such industries as wind power, automotive and aerospace industry, and various sectors of electronics production.

In 2015 they began work on big investment projects in the field of rare earth metals, such as Tomtor deposit development project (Yakutia) by Rostech and ICT Group.

The following results are expected from the Subprogram [6]:

1. Design, development and adaptation of REM technology, as well as separation and production of pure oxides, metals and alloys;
2. Production of final products containing rare-earth metals;
3. Establishment of the complete technological cycle of industrial REM production (from raw material extraction to production of end products);
4. Creating conditions for commissioning and integrated development of deposits of rare-earth metals and enterprises providing raw materials for industrial production of the complete cycle;
5. Revaluation of all accounted in state balance REM reserves.

Many participants note the need for cooperation of R & D performers with industrial partners of the State Program in order to introduce the new technology in industrial production.

In 2015, Rostech, supported by Ministry of Industry and Trade, created the Center on rare earth metals based on 4 institutions. Its main task is to ensure that Rostech enterprises are provided with rare earth, rare and non-ferrous metals [8].

Furthermore, Rostech will become a major centre for all new REM technologies within National Program 15. The Centre will bring together the four institutions and will implement Rostech projects in the REM field [8].

The Centre's tasks include conducting pilot tests, project development and introduction of new technologies. The strategic goal of the Centre is to ensure Russia a respectable place in the global industry of rare earth metals.

Rostech predicts that by 2020, the demand for rare-earth metals in Russia will reach 5.7 thousand tons per year, or according to a more optimistic scenario – almost 13 thousand tons. According to the forecasts of the global market demand for rare earth in 2015 will amount to 180 thousand tons, demand for rare-earth metals will most likely increase in areas like production of permanent magnets, metals and catalysts. Lack of confidence in reliable supply has been a major constraint on the growth of REM

consumption in the last few years. Rostech scientists believe that the establishment of a reliable Russian supply will give impetus to development of industries that use rare-earth metals [8].

Thus, development of this branch of industry is a long and expensive process. Rare metals are considered to be the most important resource for innovation, which, in turn, will develop the national economy.

China is the main supplier in the world market of rare metals. Russia ranks second in the world reserves of rare and rare earth metals. However, if we consider the import of REM, our country occupies a modest position. Thanks to the mineral resources and government support our country has good prospects for long-term development of the industry.

Today, many states have already started rapid development of this market segment.

Also, Russia, with fairly big potential, effective public policy and attracted investment, will be able to create a competitive industry with a complete technological production cycle from mining and beneficiation of rare-earth metals to final market product.

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