

UDC: 331

DOI: 10.5281/zenodo.11181297

EVOLUTION AND CURRENT TRENDS OF ECONOMY 4.0 IN CANADA

Klepikova Svitlana

Associate Professor, Department of Management, National Technical University
«Kharkiv polytechnic institute»

ORCID ID: 0000-0002-3218-943X

Martiyanova Maryna

Ph.D, associate professor, associate professor of
Economy Enterprise and Business Organization
Simon Kuznets Kharkiv National University of Economics

ORCID ID: 0000-0002-2624-0964

Abstract. *Dynamics of socio-political and economic development of Canada is characterized by the presence of contradictory and multi-directional trends, which were caused, in the first place, by instability of the global economy and international trade, sharp conjuncture fluctuations in global commodity and financial markets, as well as low rates of economic growth in a number of key countries.*

The activities of the Government of Canada have become more open and transparent for citizens, because anyone has the opportunity to get acquainted with the reports and plans of any Canadian government body on its official website. Elective e-government allowed Canadians to participate more actively in public affairs and control government actions, and therefore significantly contributed to the development of civil rights.

In many international ratings, taking into account, first of all, the stability of the political situation, the stability of the financial system, the level of income on the soul of the population, as well as the conditions of doing business and living in the country, Canada occupies a leading position and is in the top 20 countries of the world.

Keywords: *Economy 4.0, global economy, state policy, digitalization, international rankings.*

Introduction. Such countries as Great Britain and Canada can be called the representatives of the digital era with a modernized system of public administration in accordance with the requirements of the digital economy. So, as a result of the effective prudence of e-government in Canada, the provision of services, settlement operations and interaction with the community with business representatives (for example, a register of new entrepreneurs, obtaining a driver's license, licenses for fishing and hunting, payment of fines for improper parking, etc.) began to be carried out through electronic kiosks or Internet. In this way, the service is used by 95% of Canadians. At the same time, the position of the Canada Government is that the provision of services through the special means of communication should complement, and not replace, other means of communication. The above mentioned emphasizes the relevance of the selected research topic.

Literature analysis. The purpose of the article (Petra Maresova, Ivan Soukal, Libuse Svobodova, Martina Hedvicakova, Ehsan Javanmardi, Ali Selamat & Ondrej Krejcar, 2018) is to fill in the gaps and provide an overview of research concerning industry 4.0 on business and economic prospects. Business, microeconomic and macroeconomic economic problems are being reviewed. The results of the research show that aspects of the development of work and skills, the adoption of smart technologies, intelligent production and digitalization are very well described in modern scientific research.

In article (Turečková, Kamila, 2023), the term "Society 4.0" is used to define a group of people in advanced economies who form a modern cultural society that is strongly influenced by technological development and digitalization and which have a significant impact on most aspects of human life. The concept of "Society 4.0" is closely related and actually corresponds to the Fourth Industrial Revolution, which is also called "Industry 4.0." The article is aimed at presenting the concept of the

Society 4.0 in its actual form and identifying its general exogenous and endogenous consequences, in particular in the field of economics.

The authors (Mohd, Javaid, Abid, Haleem, Ravi, Pratap Singh & Anil Kumar, Sinha, 2024) note that digital economy differs from the traditional as it relies on digital technology, online transactions and its transformational impact on traditional industries. The economy is increasingly digitalizing, changing in line with changing of production and consumption of products and services. The new roadmap is provided by Industry 4.0 services to help many industries to adapt their traditional methods to innovative conditions. The digital economy has expanded integrated ecosystems that use software platforms to create value, build resilience, and drive innovation through networked goods, assets, people, and processes that quickly replace old linear value chains.

The article (Hannah Fawna, 2023) looks at the impact of Industry 4.0 on the economy, examines its key components and potential benefits. Industry 4.0, also known as the Fourth Industrial Revolution or Digital Revolution, entails the integration of digital technology into various industries. The article explores how this transformation changes production processes, workforce dynamics and business models, ultimately driving economic growth and innovation. In addition, the authors consider the challenges and implications of Industry 4.0 to provide a comprehensive understanding of its effects on the economy. The purpose of the article is analysis of evolution and current trends of economy 4.0 in Canada.

Methodology. The basis of the current research is the application of the index method. The index method is a method of statistical investigation that allows using indices to compare complex socio-economic phenomena by bringing values that are analyzed to some general unity.

Main Part. For Canada, the development of digital technologies is one of the priorities of the state. The policy in the field of transferring Government services online began to be implemented in Canada at the end of 1990. According to the

United Nations e-government index for 2018, Canada ranked 23rd place, and its level is recognized as very high.

This is largely due to the implementation of an effective state policy based on effective legal foundations. The experience of Canada, in our opinion, is of great scientific and practical interest for Ukraine, since it can be borrowed both at the state and regional levels.

The legal framework for the development of digital transformation in Canada is contained in the following policy and legal documents:

- 1) Strategic Plan for Digital Operations;
- 2) Strategic Government Plan of Canada for Information and Information Technology Management;
- 3) Strategy of Canada Government on Cloud Implementation [2; 10].

The foundations for the development of digital technologies are also laid down in the following documents:

1. the Information and Technology Policy Framework;
2. the Information Technology Management Policy;
3. the Information Management Policy;
4. the Service Policy;
5. the Network and Device Acceptable Use Policy.

However, the listed documents were valid only until April 1, 2020, since from this date the Policy on services and digital technologies begins to apply. Service and Digital Policy serves as an integrated set of policies to improve customer experience and government operations through digital transformation. On April 1, 2020, another important document comes into force - the Service and Digital Directive, which regulates the process of managing the provision of services, information and data, information technology and cybersecurity in the digital age, by Canadian government organizations. This Directive replaced the Information Technology Management Directive, the Information Management Roles and Responsibilities Directive and the Documentation Management Directive. In the framework of this work, the analysis of

the Directive on Automated Decision-Making, which entered into force on April 1, 2019, is also of interest. As practice shows, the Government of Canada is increasingly striving to use artificial intelligence to make (or assist in making) administrative decisions in order to improve the provision of services. The government is doing this in a way that is consistent with the basic principles of transparency, accountability, legality and procedural justice. It should be noted that the text of the Directive reflects the understanding that artificial intelligence technology is developing rapidly. In our opinion, this approach is the only one true in such a dynamically developing industry.

A new stage in the development of digitalization in Canada is associated with the launch of the Canadian Digital Charter in May 2019. The development of the information law of the Charter was facilitated by the increase in data leaks, and therefore there was concern in society about the way personal information of citizens is processed. The digital Charter focuses on the following ten principles.

1. Universal access. All Canadians will have equal opportunities to participate in the digital world and the tools necessary to do so, including access, communication, literacy and skills.

2. Security and protection. Canadians will be able to rely on the integrity, authenticity and security of the services they use and should feel safe online.

3. Control and consent. Canadians will control what data they share, who uses their personal data and for what purposes, and know their privacy is protected.

4. Transparency, mobility and interoperability. Canadians will have clear and managed access to their personal data and should be able to share it without undue burden.

5. Open and modern digital government. Canadians will be able to access the Government of Canada's state-of-the-art digital services, which are safe and easy to use.

6. Equal playing field. The Government of Canada will ensure fair competition in the online marketplace to promote Canadian business growth and reaffirm

Canada's leadership in digital technology and innovation while protecting Canadian consumers from market abuse.

7. Data and figure for benefit. The Government of Canada will ensure that data is used ethically to create value, promote openness and improve people's lives – at home and around the world.

8. Strong democracy. The Canadian government will protect freedom of expression, and protect citizens against online threats and disinformation aimed to undermine the integrity of elections and democratic institutions.

9. Freedom from hatred and violent extremism. Canadians can expect that digital platforms will not encourage or spread hate, violent extremism or criminal content.

10. Strict compliance and real responsibility. For violation of laws and regulations that support these principles, significant sanctions will be imposed [3; 6].

In our opinion, the Digital Charter is quite in the spirit of the times, and reflects the most important democratic principles. However, the Charter is not a legal document and therefore has no legal force. In order to put its provisions into practice, the Government must revise current legislation and regulations to put into effect the principles of the Charter, including the criticized Protection of Personal Information and Electronic Documents Act (PIPEDA). Thus, the listed acts create a political and legal basis for the development of digital technologies in Canada. However, at the provincial level, attempts are also being made to regulate the area under study. Thus, on October 10, 2019, the Law “On Promoting the Digital Transformation of Public Administration of the Province of Quebec” entered into force.

The law was adopted in order to promote the digital transformation of public administration by establishing rules applicable in the context of the implementation of projects in the field of information resources of national interest. The provincial authorities are actively implementing a policy in the field of development of digitalization, in connection with which the following important steps were taken:

- 1) the adoption of the Law “On the Management and Control of Information Resources of State Bodies and Enterprises of the Government” in 2011;
- 2) the adoption of the Framework Policy for Information Management and Management of Public Institutions;
- 3) the approval by the Treasury Council of rules concerning applications for permits for projects and tools for managing information resources, etc. [4; 7].

In the province of Quebec, since the end of 2017, the Government has been implementing a broad five-year plan worth US \$1.5 billion to adapt society to the digital economy.

An interesting experience also exists in the province of Ontario, which became the first province to adopt the International Charter of Open Data. Today, the province occupies quite high positions in the field of digital technologies. Thus, a data catalog has been created in the given province, which includes a complete list of data owned or managed by the government. In addition, more than 700 open data sets have been released in Ontario to date. The authority responsible for the development of digital technologies is the Ontario Digital Service. The work of the Digital Service is based on the use of digital age tools to create user-oriented services.

One of the achievements of the Digital Service is the introduction of the Digital Services Standard, which includes 14 points aimed at providing high-quality online services. It is important to note that the Government of Ontario, introducing new digital technologies, and technologies that ensure the receipt of services, is focused primarily on the interests and needs of the inhabitants of the province. In general, in the province, the practice of attracting the population to discuss the development of digital technologies was implemented, for example, the Open Government Action Plan, the Public Relations Structure, the Open Data Directive, and the analysis of results, the activities of open government, in order to improve the programs and services [5; 8].

The Simplification, Acceleration and Improvement of Services Act was passed to help to transform the public service delivery process to ensure in the following ways:

- 1) public access to high-quality digital services from anywhere and at any time;
- 2) digital services that are well designed and operate efficiently;
- 3) better access to useful government data;
- 4) optimal use of digital resources and data by a wide range of public sector organizations for the development and implementation of policies, programs and services [1; 9].

An analysis of Canadian law concludes that it is in continuous development. An effective policy is being implemented in the country that has allowed the country to take high positions in international ratings. The provinces of Canada are also active in regulating digitalization. Currently, there has been a realization that the use of technological advances is no longer just a competitive advantage, but the need for prosperity. Positioning Canada as a world leader in today's digital economy requires a collaborative national effort across all sectors and all stakeholders. Canada has the potential to become a global hub for innovation. And its people continues to be its main asset. Therefore, ensuring that all Canadians are able to benefit from an inclusive economy, digital-based economy is a key one to navigating this evolving digital landscape [2; 4].

Through the use of e-government in Canada, the cooperation to provide services between the federal level of government and local government has become closer.

The activities of the Government of Canada have become more open and transparent for citizens, because anyone has the opportunity to get acquainted with the reports and plans of any Canadian government body on its official website. Elective e-government allowed Canadians to participate more actively in public affairs and control government actions, and therefore significantly contributed to the development of civil rights [3; 9].

The peculiarity of the economic model of the country's development is the large share of foreign capital – up to 40% (92% – in the automotive industry, 68% – in the chemical industry, 63% – in the electric power industry (figure 1) [11].

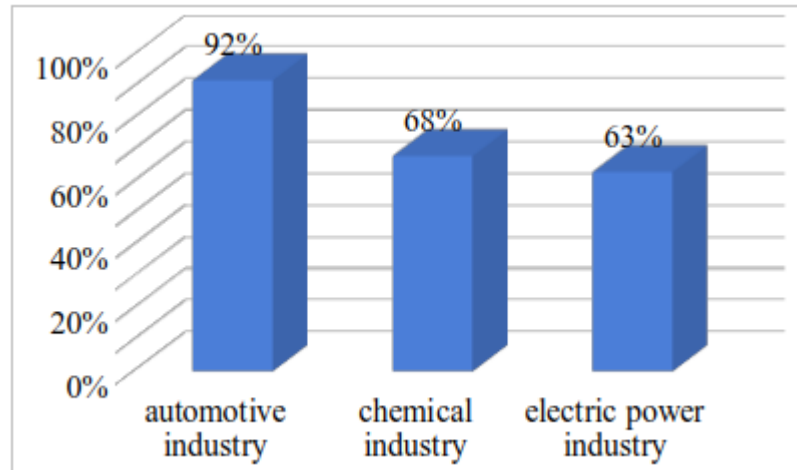


Figure 1. The share of foreign capital in the Canadian economy branches

In many international ratings (table 1), taking into account, first of all, the stability of the political situation, the stability of the financial system, the level of income on the soul of the population, as well as the conditions of doing business and living in the country, Canada occupies a leading position and is in the top 20 countries of the world [11].

Table 1. Canada's place in international rankings

The name of the Index	Canada Index	Maximum value of the Index
Human development index	0.9	1
Ease of Doing Business Index	15	1
Global Competitiveness Index	13	1
Corruption perception rating	10	1
Economic Freedom Index	79.1	100
Index of freedom of the	11	1

press		
Democracy Development Index	7	1
Political and civil rights Index	1	1
International Property Rights Index	8	8.3
Prosperity Index	5	1
Knowledge Economy Index	8.9	10
Knowledge Index	8.7	10
Economic Stimulus System Index	9.5	10
Innovation Index	9.3	10
Education Index	8.6	10
Information and Communication Technology Index	8.2	10

Dynamics of socio-political and economic development of Canada is characterized by the presence of contradictory and multi-directional trends, which were caused, in the first place, by instability of the global economy and international trade, sharp conjuncture fluctuations in global commodity and financial markets, as well as low rates of economic growth in a number of key countries.

The share of Canada's GDP in the service sector (including the banking and financial sectors) remained at 70%.

In the structure of GDP, the shares of the economic branches are the following:

- 1) manufacturing industries – 12.8%;
- 2) Mining and Oil Production – 8.4%;
- 3) construction – 7.2%;
- 3) agriculture and fisheries – 1.6% (figure 2) [11].

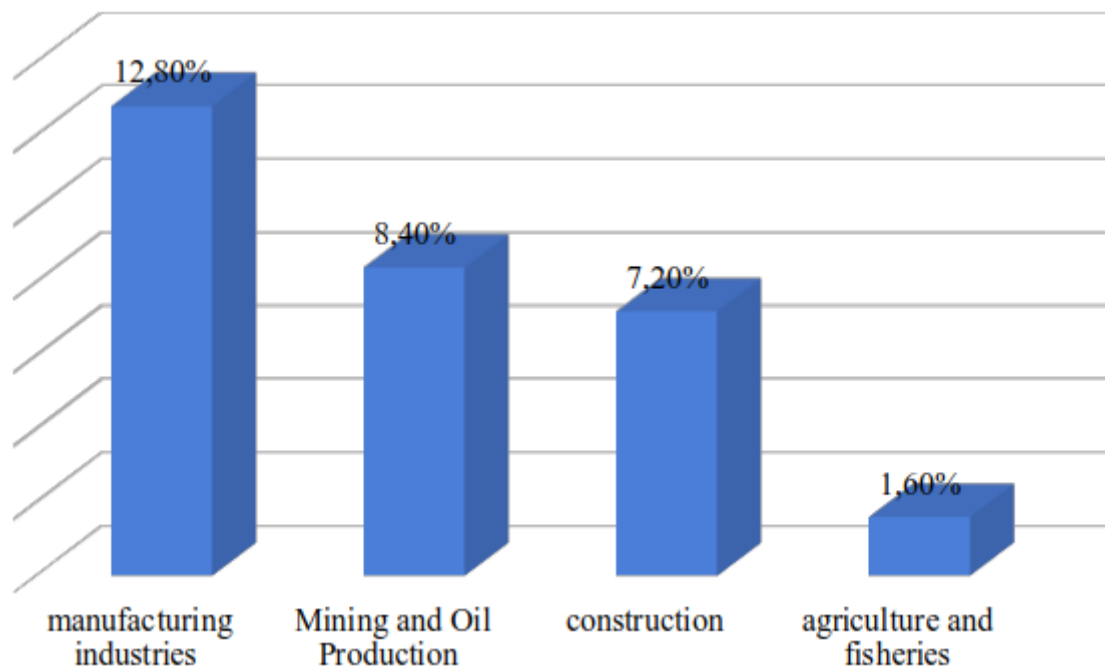


Figure 2. The share of Canada's GDP in the service sector

Canada's largest industry is the finance, insurance and property management.

The following branches also contribute significantly to Canada's GDP:

health and social support – 6.8%;

public administration – 6.7%;

information and culture – 3.9% (figure 3) [11].

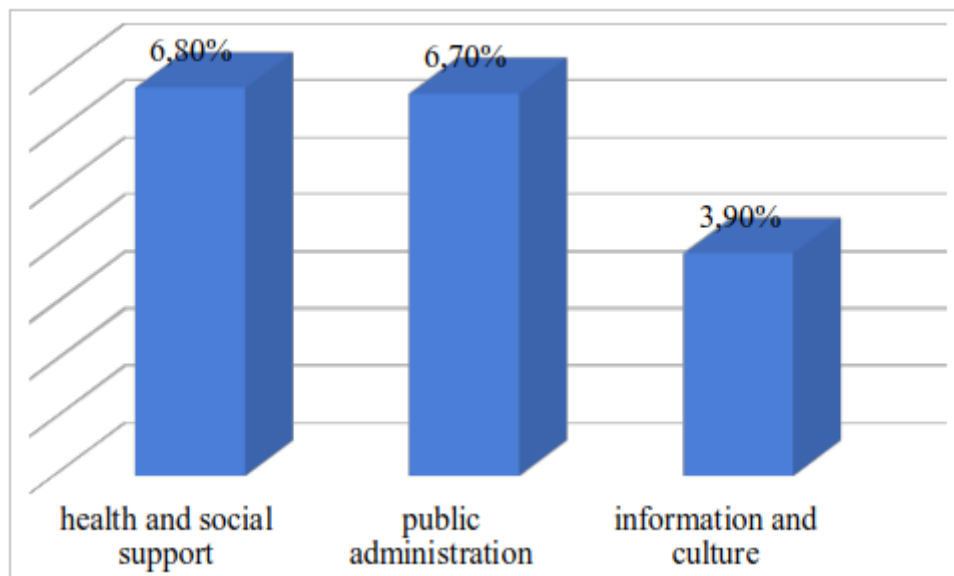


Figure 3. The additional share of Canada's GDP in the service sector

Canada has passed the difficult path of its development – from colonial dependence with fuel, raw materials and agricultural specialization to a sovereign post-industrial country with a high national income per person (average net income of a Canadian is \$29,365 per year) and high quality of life indicators of the population (IRLP = 0.9).

Conclusions. Thus, at the present stage, the dynamics of Canada's economic development is constantly changing, which is connected with the effect of both internal and external factors, in particular:

- 1) the open nature of the Canadian economy combined with the high degree of integration of its business community into modern world economic ties;
- 2) primarily international trade;
- 3) counters the turbulence of financial and commodity markets;
- 4) the fall in global oil prices;
- 5) the problems of external debt and the instability of the international system settlements;

6) low economic growth rates in the United States and European Union countries;

7) a slowdown in Asia-Pacific developing countries.

A similar situation led to:

1) termination of national oil production projects from oil sands, liquefied gas production, construction of export pipelines the Pacific and Atlantic coasts of Canada;

2) significant deficits in regional budgets and corresponding reduction in spending on socially significant programs and infrastructure provincial projects;

3) cancellation of implementation of numerous investment federal projects, including in the field of transport infrastructure (bridges, roads, etc.), rail and pipeline transport, the implementation of which in Canada and the United States was provided for by the Government of S. Harper in 2013;

4) reduction in investment growth in key extractive industries (less than 1% per year), a noticeable decrease in purchases for state needs as a result of the reduction of public spending, low growth rates of consumer demand, including in the housing market, as well as the low level of commercialization of innovative developments.

Discussion. To stabilize internal impact factors the “Economic Action Plan” was approved for the Canadian economy, designed for 3 years’ actions. Implementation of the proposed plan provided:

1) elimination of the federal budget deficit;

2) reduction in public debt;

3) ensuring an acceptable rate of economic growth combined with the creation of additional high-paying jobs and the implementation of numerous infrastructure projects;

4) optimization of state spending to support real sectors of the economy, those most affected by crisis events, namely: automotive, shipbuilding, timber industry, fishing;

5) significant allocation of priority high-tech development sectors with gradual formation of a new model of the Canadian economy with the aim of moving to an innovative development path.

Also important measures to stimulate external factors included a significant strengthening of the capabilities of the system of Canadian trade missions abroad, which has found its own introduction in the opening of 4 new trading offices in provinces of China and holding 13 representative Canadian business missions in 20 countries around the world.

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