
The Post-War Rebuilding System by Chess-Business Modeling: First Steps and No Answers

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Tatiana O. Nikolaychuk¹

Abstract:

Purpose: The scientific research is devoted to solving the problem connected with the determination of the essence and role of the chess business modeling in the system of balanced post war growing and their place in the market infrastructure.

Design/methodology/approach: The military the Russian invasion in Ukraine have led to numerous transformations in the social, economic, political, ecological and regulatory field. The formation of effective economic key drivers postwar period is the key to restoring the institutions of civil society and market economy of Ukraine. A quantitative literature review (a meta-analysis) was conducted to investigate the market without inter-study differences. The comparative method was used to form the main vectors of post war market's renovation and the adapting possibility of these tools to the Ukrainian economy.

Findings: The study conclusion on the basis of findings reveals that the chess business modeling can form as the most valuable route for entity so analyze the side effect of it, e.g. impact on the regional financial or socio-economic performance. The government should react fast and respond to the urgent needs of regions and local communities. Chess business modeling will be able to find the most available business ways for entities and side effect for society and environment. Chess business modeling also could be used as a tool dealing with institutional traps.

Practical implications: The paper has guiding the comprehensive framework as for post war society so for economic grows of Ukraine.

Originality/value: The paper could continue the evaluation of the effectiveness of traditional business and the innovative one, conduct the more comprehensive, in-depth and scientific analysis of the post war economic renovation system, provide more practical management to promote sustainable development of the country.

Keywords: Chess business modeling, post war market, investments partnership, economic development, institutional trap.

JEL codes: K32, Q38, Q28, Q29, Q39.

Paper type: Research article.

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¹State Organization "Institute of Market and Economic & Ecological Researches of the National Academy of Sciences of Ukraine" Ukraine. E-mail: mazzi071988@gmail.com;

1. Introduction

The invasion means destruction of existing markets, business collaborations and the formation of new vectors of military and civilian activities. Ukraine is so rich with natural resources and recreational zones, there are lots of funds of inland waters (rivers, lakes, estuaries, access to two seas), a wide range of landscapes with rich flora and natural reserved fund objects, which can be used for recreational services (On Nature Reserve Fund of Ukraine, 1992). One of the contractual types of public private partnership in various spheres of the national economy is franchising.

The military the Russian invasion in Ukraine have led to numerous transformations in the social, economic, political, ecological and regulatory field (The Commercial Code of Ukraine, 2003). The deviant behavior as a social phenomenon can negatively affect not only the individual but also others, and even the economic well-being of the region. The formation of effective tools to ban deviant behavior in the martial law and postwar period is the key to restoring the institutions of civil society and market economy of Ukraine (On approval of the Concept, 2014). For Ukraine Russian invasion means destruction of existing markets, business collaborations and the formation of new vectors of military and civilian activities (On the legal regime of martial law, 2015).

Barbara Bedowska-Sojka, Ender Demir and Adam Zaremba (Bedowska-Sojka, 2022) examine the hedging properties of different asset classes as impacted by the Russian invasion of Ukraine in 2022. Lawrence O. Gostin, Leonard S. Rubinstein note (Gostin and Rubenstein, 2022), that military aggression by the Russia causes the destruction either critical infrastructure as hospitals or other rehabilitation facilities.

Lack of habitual conditions causes people to feel anxious, and the inability to receive medical services - a feeling of aggression, especially providing medical care to children (Reid, 2005). Emil Edenberg (Edenberg, 2017) admits about the conditions of military invasion, an important method of combating psychological fatigue, depressive attacks and the way to challenge the political narratives and artistic development of the individual.

Anna Fournier (Fournier, 2018) claims that the military conflict between Russia and Ukraine has been in a state of frozen aggression for many years. The psychological attitudes of Ukrainians, as a young nation, do not coincide with the Soviet sentiments of Russian citizens.

Catherine Wanner (Wanner, 2021) believes that empathic support in postwar period is a very important. There is necessary to combine social deviations of personal and collective nature. Meihong Sun notes (Sun *et al.*, 2022), that sector-level analysis shows that the manufacturing sector in EU countries is heavily affected by the war and finance and services sectors show a negative effect to a larger extent than manufacturing.

Fangzhou Lu and Lei Huang claim (Lu and Huang, 2022), that firms that suspend or withdraw business from Russia, they have higher ESG overall scores, especially the social score and the environment score. However, firms with higher ESG scores tend to take longer to announce their withdrawal and their degree of cutoff from Russia is also the “softest” as they could be ready to resume business in Russia when the invasion is over. They are also more likely to have headquarters in a country with a higher security concern, public social-awareness, institutional quality, a common law origin, or a policy to impose sanctions on Russia at the country level.

Neil MacFarlane and Anand Menon (MacFarlane and Menon, 2022) admit that EU members did not take long-standing Russian positions seriously, assumed any neighbour would be eager to sign up for ‘more Europe’, and have failed to generate a viable reply to Moscow's intervention.

Kai Gehring (Gehring, 2022) tries to explain, whether the external threats strengthen group identity. Comparing low-threat to high-threat states in a difference-in-differences design, he finds a sizeable and persistent positive effect on EU identity. It is associated with higher trust in EU institutions and support for common policies. Lower-level identities remain unaffected, and proximity to Russia and Russian minority size are driving high-threat status.

Healthcare workers must be allowed to move freely and humanitarian agencies granted access to those in need of aid, argues Elly Nott (Nott, 2022).

Oscar Jonsson and Robert Seely (Jonsson and Seely, 2015) we investigate Russian warfare from the four spectrums of military, informational, economic, and energy, and from political influence operations. From this, we propose the concept of Full-Spectrum Conflict that captures the use of violent and non-violent means as well as the conduct of conflict in differing degrees of intensity from peace to war and the space in between.

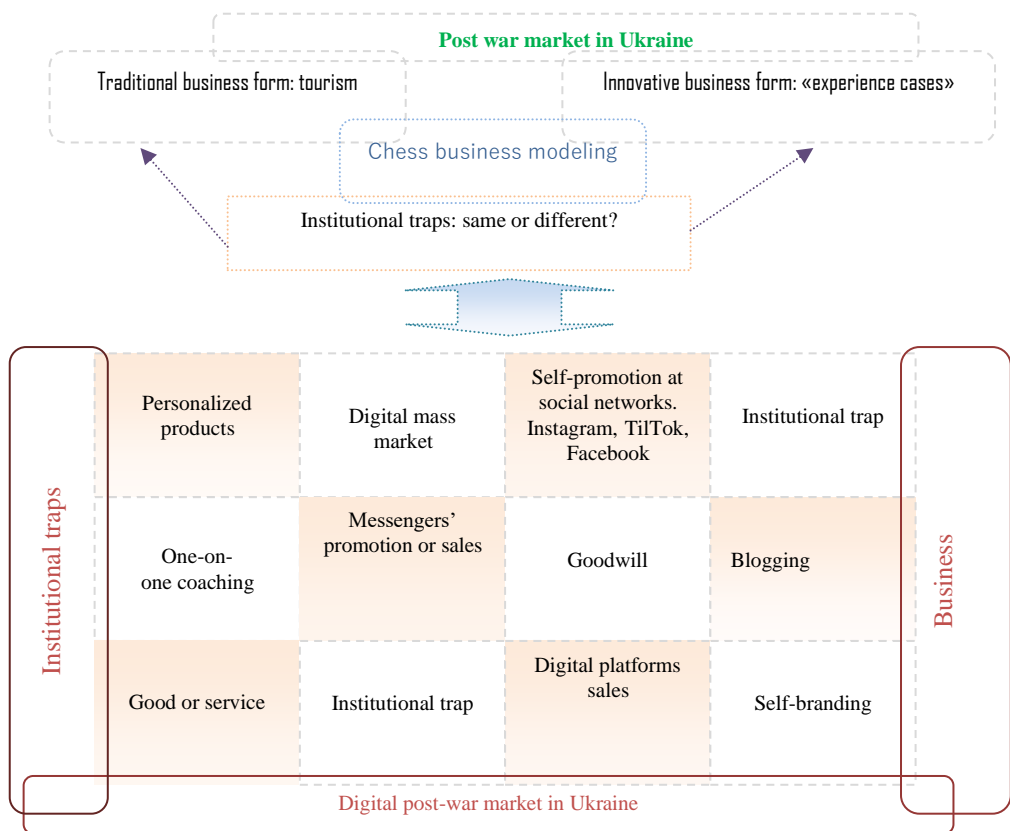
According to the opinion of Sophie Roborgh and others (Roborgh *et al.*, 2022) the invasion of Ukraine by Russia in February, 2022 looks set to create another 21st-century humanitarian disaster, joining the protracted conflicts in Syria, Iraq, Yemen, Libya, Afghanistan, and Darfur, Sudan. Over the coming weeks millions of people will be displaced both internally and to neighbouring countries. The international community must provide far more humanitarian support, including medical evacuations all over Europe, immediate visas, appropriate care and support for displaced populations, and increased financial assistance to host countries.

Michael Kofman and others (Kofman *et al.*, 2017) find that the campaign in Eastern Ukraine was an ineffectually implemented — and perhaps ill-conceived — effort to achieve political fragmentation of Ukraine via federalization and retain Russian influence. Russia achieved its primary objectives but at a much higher cost than desired and through a fitful cycle of adaptation.

Purpose of the article is to determine and institutionalize the main cost-effective forms of economic activity in protected areas, and the formation of cooperation's vectors of nature reserve fund with territorial communities and regional business groups. For example, franchising agreements are determined, not only as forms of contractual cooperation, but also as innovative start-up concept in the field of reserve fund, the possibility of carrying out economic activity under a state brand (logo, trademark), obtaining additional guaranties for the development of businesses and the formation of constant investment flows to protected areas (Nikolaychuk, 2019).

The following situation could be considered: the entity provides the tourism services in Ukraine. Post war market hasn't enough infrastructure and logistics' chain to support this activity. So the entity launches the digital twin (Figure 1). The digital twin provides so called «experience cases» (Nikolaychuk, 2021), which can realistically restore infrastructural objects before Russian aggression and destruction to make a virtual tour. The economic activity is going on logo of local Nature Park.

Figure 1. Traditional business vs Innovative business form



Source: Own study.

2. Materials and Methods

The methodological essence of the research results is considered as an identification tool and increasing the post war market and new consumer generation, the mechanism for effective implementation chess business modeling, and ensuring the value of strategic relationships. Integration of relationship marketing and supply management of trade companies is interpreted in the concept of demand chain management, based on a purposeful systematic formation and increase in value for the end user.

Research of chess business modeling as an alternative method of formation of the post war market and sales channels, which will enable the reformation of all industries according to the requirements of the market economy of the country, and to minimize at the normative level the Post-Soviet approach to the performing economy activity which does not take into account anthropogenic and military impact on the environment. A number of scientific methods and approaches were applied to research the problems raised.

Theoretical and methodological provisions are based on the fundamental research of national and foreign experts and scientists in the field of economic and environmental development of protected areas. The application of the regional approach as the basis for methodological analysis of protected areas reform problems is characterised by a social, economic, and political characteristics of different regions, which considerably affects the development participation of financial capacity. Using the search-problem methodology, a problem was found and recognized, which will be solved in the future by selecting the valuable option.

The initial post war market value can be calculated by adding the initial value at the end of the war and the value of investment assets introduced during fixed term (e.g. first year) and subtracting from their amount the value of fixed assets disposed of during this term (e.g. infrastructure rebuilding or logistic renovation),

$$V_{pwm} = V_{pwm1} + V_{inv} - V_{da}, \quad (1)$$

so:

V_{pwm} – the post war market value (e.g., about fixed term, at the end of the year);
 V_{pwm1} - the post war market value after the cessation of active hostilities;
 V_{inv} - the value of investment assets introduced during fixed term (e.g. first year);
 V_{da} - the value of fixed assets disposed of during this term (e.g. infrastructure rebuilding or logistic renovation).

From the psychological economics' point, the formation of a comprehensive system of rehabilitation has a series of elements which combine motivational and psychological guidelines of society and economic tools for the development of the post-military market in Ukraine.

3. Results

3.1 Classic Chess Matrix as a Business Framework

The economic and environmental development in the field of nature management in Ukraine requires the formation of new regulatory mechanisms that will take into account their economic and material nature (Nikolaychuk, 2021). This is particularly true in the aftermath of disasters such as wars. The areas protected through the Nature Reserve Fund of Ukraine are not only regional nature protection centers, which ensure the ecological well-being and health of the population, but such territories should also be developed in symbiosis with the economic and ecological needs of local communities and regions in the postwar period. They could help overcome the traumas and losses of the war. At the same time, protected natural areas that have been adversely affected by the war must be restored.

In addition, we propose a "chess" modeling scenario of economic activity and economic growth as socially responsible business, according to which the entrepreneur chooses the optimal combination of formal and informal elements, which in his opinion will have a higher level of economic and organizational benefits, reduction of transaction costs and loyalty behavior, taking into account the geo-social, economic, financial and administrative features of the region.

Institutional trap (cell) - can be a temporary obstacle to business or lead to losses for the entity, and a set of insurmountable circumstances for the entity that can lead to bankruptcy (mat).

Institutional framework (chessboard) – a number of formal and informal institutions, which governs socially responsible entrepreneurship.

3.2 The Players

ID Entity - pawn 1: an entity that has a low level of logistics and resources potential for the full production chain. This entity intends to provide some services or sell for e.g. environmentally friendly products. This entity is on a simplified taxation system, works with individuals and individual entrepreneurs (for example, a natural person-entrepreneur II group, providing environmental education services);

ID Entity - pawn 2 - a business entity that has a high level of logistics to form a complete chain of production and supply. This entity is on the general system of taxation, has a share capital, but carries out economic activities that have permitted stationary sources of pollution (for example, generators) or is morally unacceptable for a certain segment of the population (for example, the organization of online casinos, the sale of excisable goods);

ID Queen: is an entity, which has several economic activity areas (e.g. regardless of the scenario of formation of corporate ethics and directions of economic activity) has sufficient level of investment attractiveness, own "niche" in the market and a certain range of potential consumers, but needs financial and investment support and implementation of innovative instruments in the economic process;

ID King: is a business entity which balances all the indicators of socially responsible business, with high profits, and a wide range of potential investors and consumers (so-called "win-win model").

Alternative scenarios of economic activity are presented for two subjects of economic activity, which can bring to the desired socially responsible model of business or bankruptcy, depending on the aggregate of institutional paste as to spend the entity

Chess business modeling is a planning tool, which provides the most economic valuable business way. Algorithm of simple chess business model (main positions):

id: Δ Pawn \rightarrow id: Queen

id: Δ Pawn \rightarrow bankrupt enterprise

id Δ Queen: a lot of partners, many investors, different goods and services

id Δ King : niche market, social responsibility of business, high development, member of public programs

Main rules:

Every pawn is business.

Every pawn selects a path on the so-called chess board.

Every square is pros or cons for business.

More cons less – chance to be King or Queen

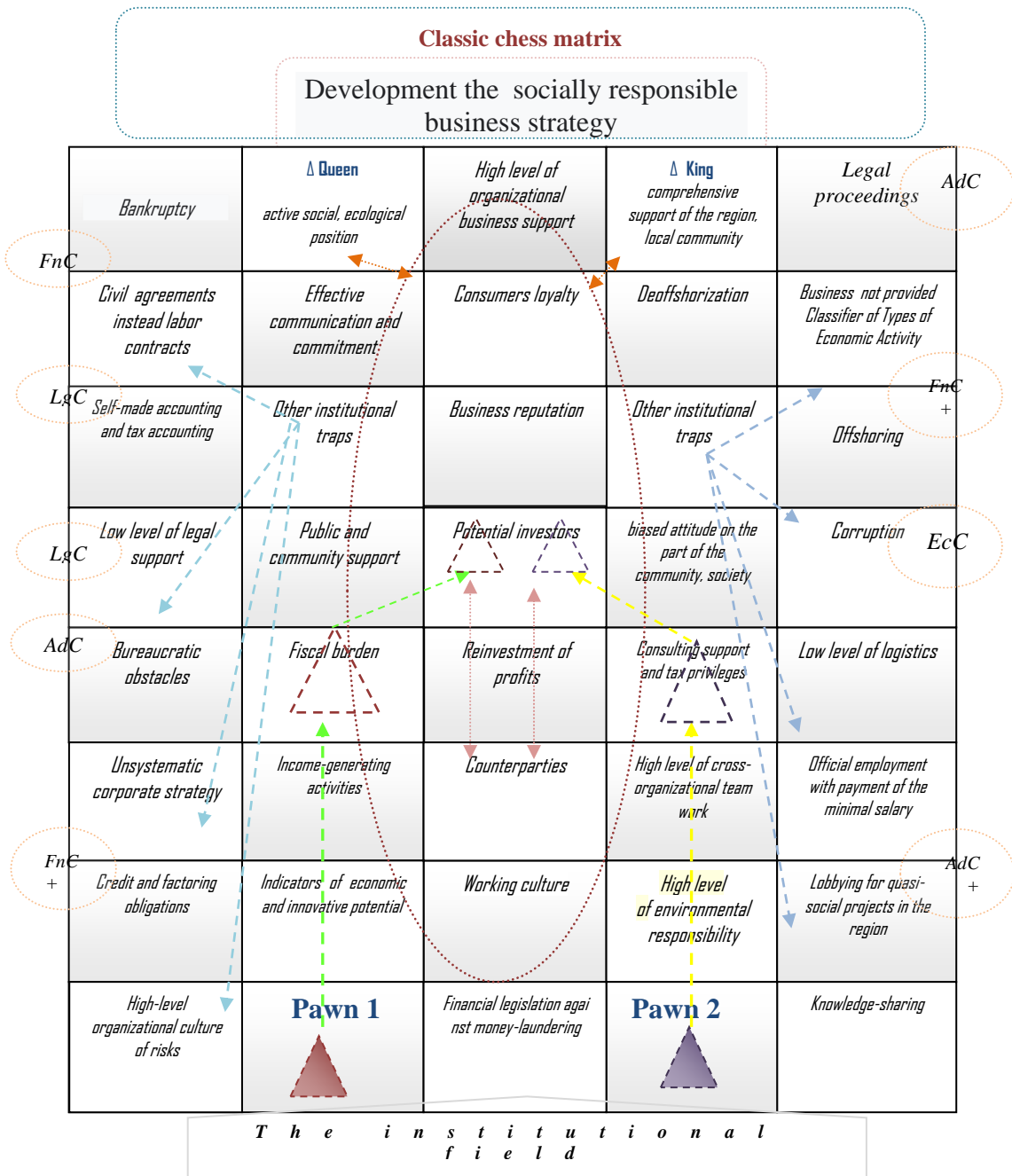
Institutional trap can be also a step to innovative economic activity (Figure 2).

According to Figure 2 they can see the so called «Pawn's way». The way can be short and profitable for all players, e.g. local communities, authorities, other business groups, society, etc. But, there are a lot of traps as for entities, so for post war society, environment. It may consider next checks, as institutional traps' result. *Administrative check* (AdC) – institutional trap, which is related to improper or illegal registration and conduct of business (e.g. labor contract with staff according Labor Code, established 1971).

Financial check (FnC) – institutional trap, which is related improperly conducted documentation or black accounting (e.g. paying a cash under the table)

Legislative check (LgC) – institutional trap, which is related the dualistic or excessive phleximity of norms (e.g., taxation of own income, acquired by an individual entrepreneur with from the corporate account to the personal account were subject to taxation)

Economic check (EcC) – institutional trap, which is related with the lack of legal framework for a certain type of economic activity. It predetermines the use of a law analogue (e.g., tools of using a peas surrogate: securities, crypto currency, lighthouses, payment means, etc.)

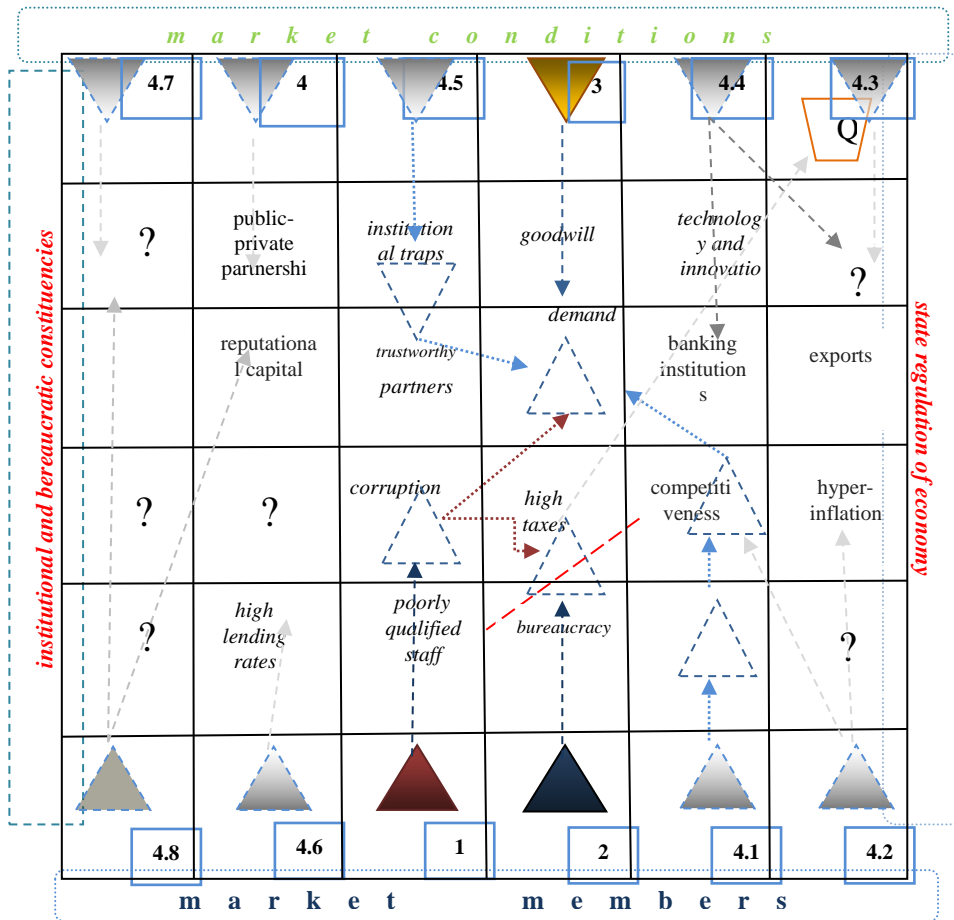
Figure 2. Classic chess matrix – framework

Source: Own study.

Institutional check (InC) - institutional trap, which is related with inconsistency of the formal frame of law and ethical-social basis (e.g. systems for financial and tax monitoring of gambling activities).

Each institutional trap launches new rules in the market's system. The one institutional trap can change or ban the whole business route. The business check will be able to form next two or three ways as for entity, so for region. The economic and ecological development of such territories will allow the formation of new vectors in the business activity, the launching of environmentally oriented start-ups, the acquisition of new business subjects. The development of environmental and economic relations in these areas requires the introduction of innovation and marketing approaches that will promote the formation of sustainable investment flows in the industry, and contractual areas of cooperation between different actors in public relations (Figure 3).

Figure 3. The principle of zero discharge in chess modeling



Source: Own study.

According to Figure 3 there are three (3) entrepreneurs:

Entrepreneur 1 – business line decoration, made of natural materials including the eco-crockery;

Entrepreneur 2 - business line eco-crockery;

Entrepreneur 3- modeled utensils.

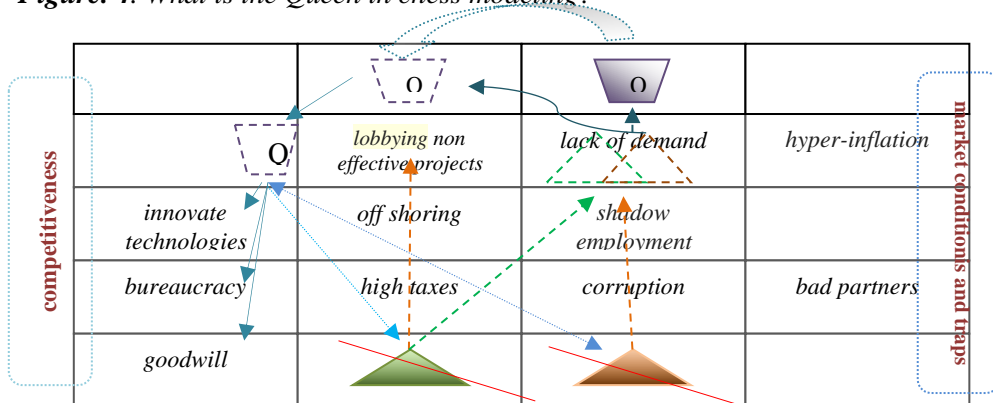
The principle of “zero discharge” in chess modeling is recycling of all business system. Some entities are die, other rise from the dead . This means that business facilities will rebuilt and used again in the process.

The first interpreter could absorb the second one. The second interpreter covers less entrepreneurial activities then first one. But expanding the production first entrepreneur pays more taxes. Paying more taxes first interpreter cant provide innovative or energy-saving technologies. The third interpreter evaluate the innovation or entrepreneurship frameworks. He keeps low-cost transaction and high level of green innovations. So, the third interpreter could absorb the first one. In case, he can't do this, there are a lot of other entities (e.g. 4.5, 4.6, 4.3 etc.) If more than a half interpreters are bankrupt or change their activity because of war, we would have "zero discharge" of market. But later, we have the same market activities according the post-war market conditions.

If one of the interpreters can get to other side of market chess border, he can be so called Queen.

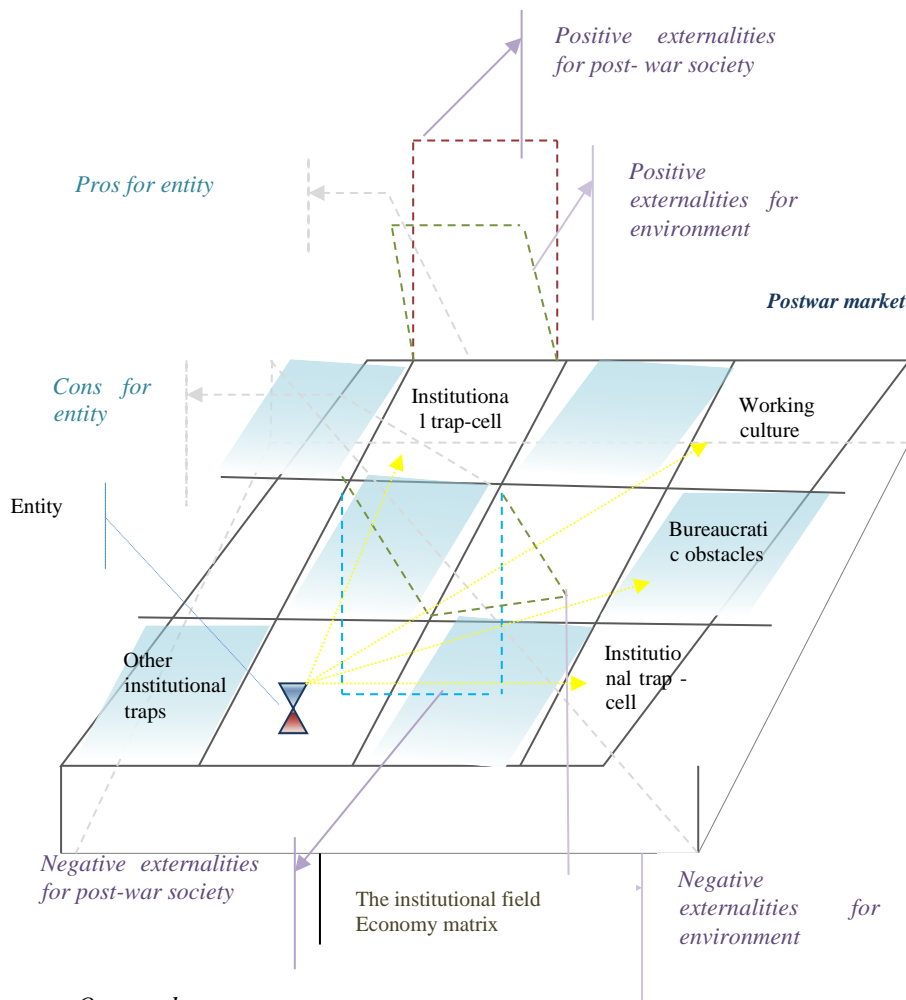
As a Queen- interpreter, it can form the main cost-effective economic activity; launch the innovative cooperation's vectors, e.g., nature reserve fund with territorial communities and regional business groups. Every national economy sector has several flagships (the Queen- interpreters). The Queen- interpreter forms the regulatory mechanisms and agreements, which will take into account their economic and material nature (Figure 4).

Figure. 4. What is the Queen in chess modeling?

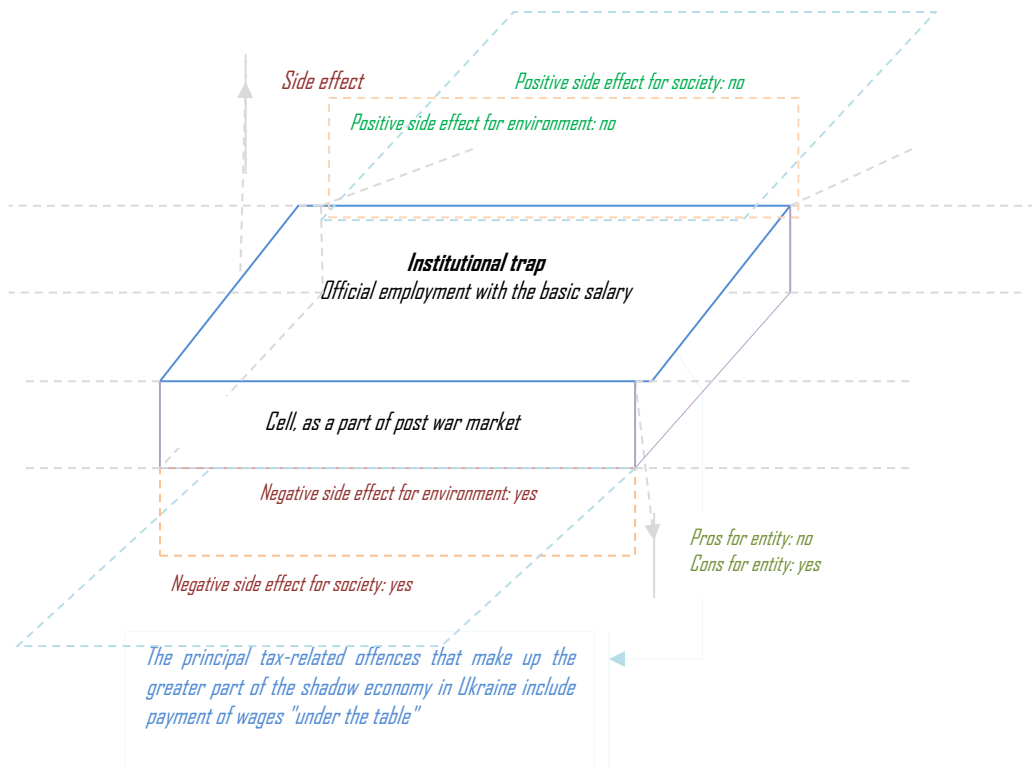


Source: Own study.

Figure 5. Classic chess matrix of forming scenarios socially responsible business vs account institutional traps



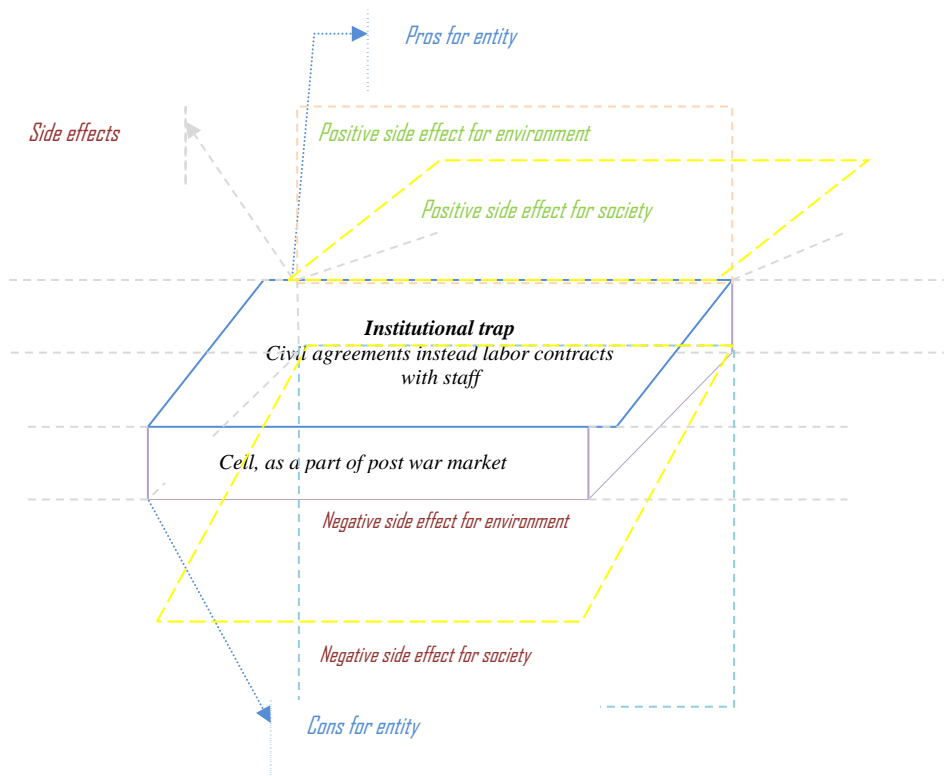
Source: Own study.

Figure 6. Institutional trap «Official employment with the basic salary»

Source: Own study.

According to Figure 6, we consider the cell «Official employment with the basic salary». This option has no positive externalities for society, because the staff earns less money and has small retired pay. There is no positive externality for environment, because poor staff doesn't worry about the environment only for their basic needs. The entity has relative plus as monthly tax reduction. But entity with false accounting has no way to development. This institutional trap has a clear negative side effect on society and the environment. We can call this institutional tap «Pure IT». There is no positive side effect either society or environment. But no every institutional trap has so clear side influence for such players as society or environment. Let's consider other institutional trap «Civil agreements instead labor contract» (The Labor Code of Ukraine, 1971) (Figure 7).

Figure 7. Institutional trap «Civil agreements instead labor contract»



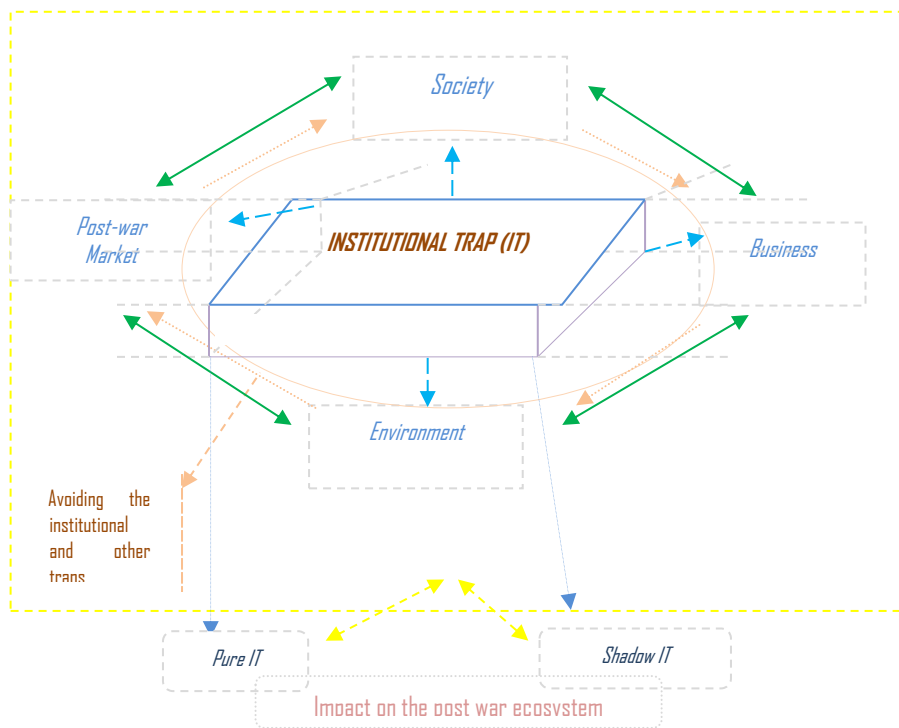
Source: Own study.

According the Figure 7, they can consider the cell - institutional trap «Civil agreements instead labor contract». The employers prefer to conclude service provision civil contracts or copyright assignment contracts, on the one hand, because in way they will not be obliged to ensure the social protection conferred to an employee through the individual employment contract, on the other hand, due to the advantages of a fiscal nature that a civil contract entails. There is a positive side effect for business, but negative for society, because staff is a part of Ukrainian society. From other side the civil contracts are more flexible (The Civil Code of Ukraine, 2003). The worker has, on the one hand, the following rights: to perform the activity according to his/her availability and capacity, to attend the training courses organized, initiated or proposed by the host organization for a better performance of the activity.

At the same time, he/she has, on the other hand, a series of obligations, respectively (can be positive for business, society and environment), e.g.: to keep the confidentiality of the information he/she has access to during the working activity (post war regional strategic socio-economic development plan), to be liable for the moral or material, environmental damages caused to the employer/beneficiary or protected areas during the working activity, due to his/her fault.

It is noticed the fact that both the employee is subordinated to the employer within the labor relation. The worker supposes to fulfill the duties received from the employer/beneficiary. But, the duties can do harm both the environment and people. The civil contract is depending on the agreement between the employer/beneficiary and the worker. It may be agreed that, in the conditions agreed in the contract, the employer/beneficiary may reimburse the expenses incurred for the performance of the activity. We can call this institutional trap «Shadow IT». Anyway the business entities should avoid institutional traps. Because most of all, the negative side effect from institutional traps is wider than positive one (Figure 8).

Figure 8. *Institutional trap in post-war rebuilding system: place to go*



Source: *Own study.*

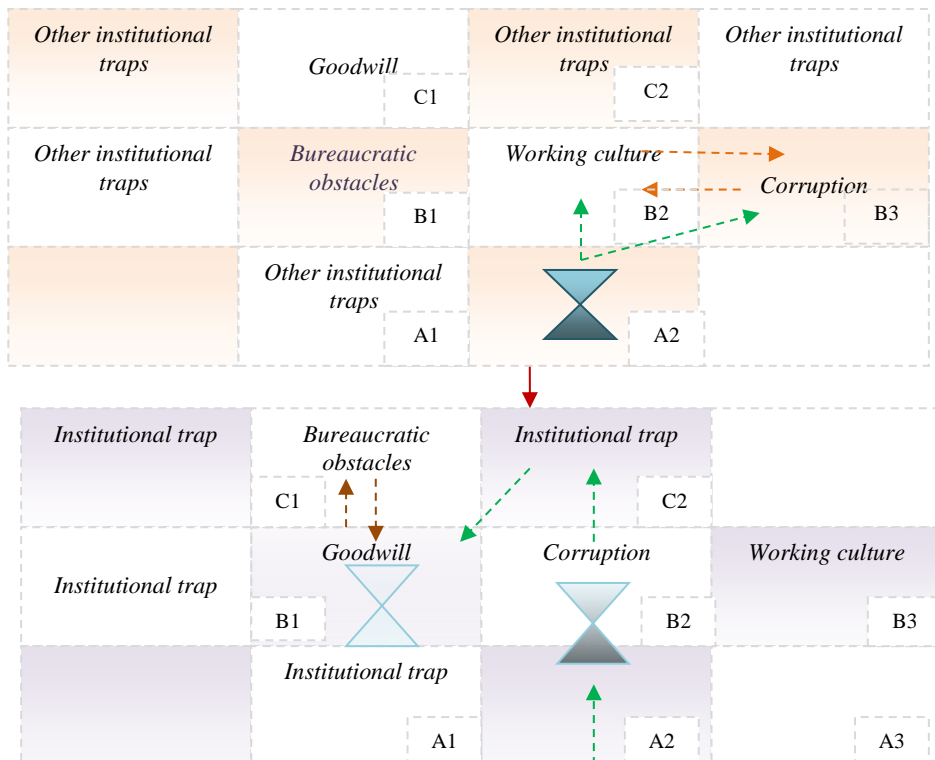
So, some institutional traps could be effective mechanisms for technological development, national capacity-building and market access across a large number of industries. We propose to consider several algorithms of cooperation between different institutions, as financial institutions that are not currently involved in cooperation in the environmental field and entities by chess business modeling system.

The war between Russia and Ukraine is going on. So we have no dates and other information. So we're starting to get preliminary data from the surveys. But we have a lot of questions and no answers. One of them:

1. Does our chess matrix is static one?
2. The entity can choose own way only by existing cells?
3. Each institutional trap may be linked to another institutional trap or cause the emergence of a new one?
4. Can we talk about double movement: either entity or cells in chess matrix?

E.g. we're shifting to an experience economy, where experiences are becoming the predominant economic offering. We can offer the traditional travelling or «digital experience cases». These cases are for soldiers, who have trauma and can't go to other country, or for people, which don't want to live home after war. We have a market straggle between traditional business activities and innovative digital ones (Figure 9). Post-war market in Ukraine is a static or dynamic phenomenon depending on economic, social or environmental factors?

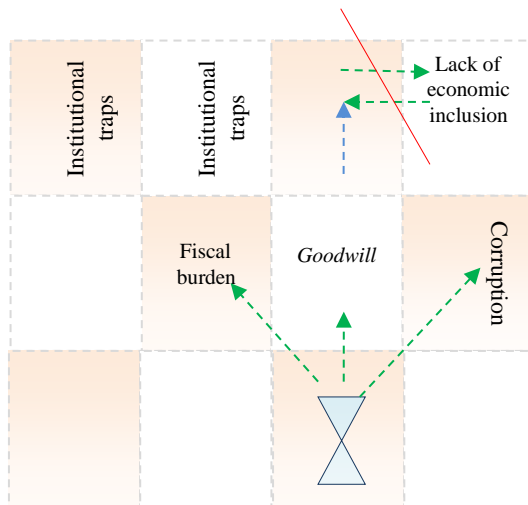
Figure 9. Post-war market in Ukraine is a static vs dynamic phenomenon



Source: Own study.

According the Figure 9 we can see that our entity (called Pawn) tries to move forward to get more earnings and to grow. But during the entity's way the market's structure is changing too. So, when the Pawn is going from cell A2 to the cell B2, it could already change. We suggest two hypotheses (Figure 10, Figure 11):

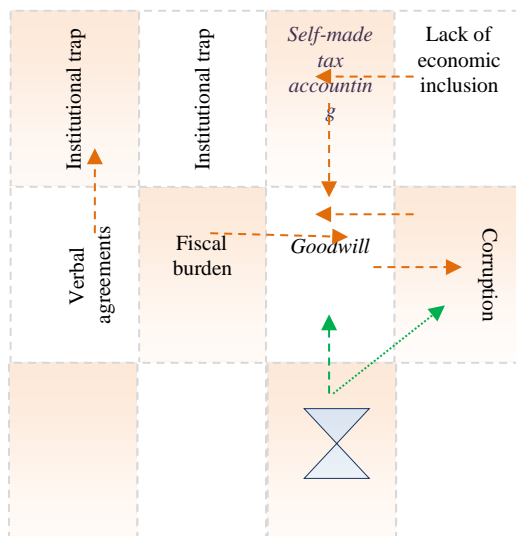
Figure 10. Chess modeling - Hypothesis I.



Hypothesis I: The chess matrix market is static. Each cell as an element of the matrix is always in its place. Entrepreneur's falling into the institutional trap depends only on his action or inaction.

The side effect depends mostly of entity's decision or economic way

Figure 11. Chess modeling - Hypothesis II.

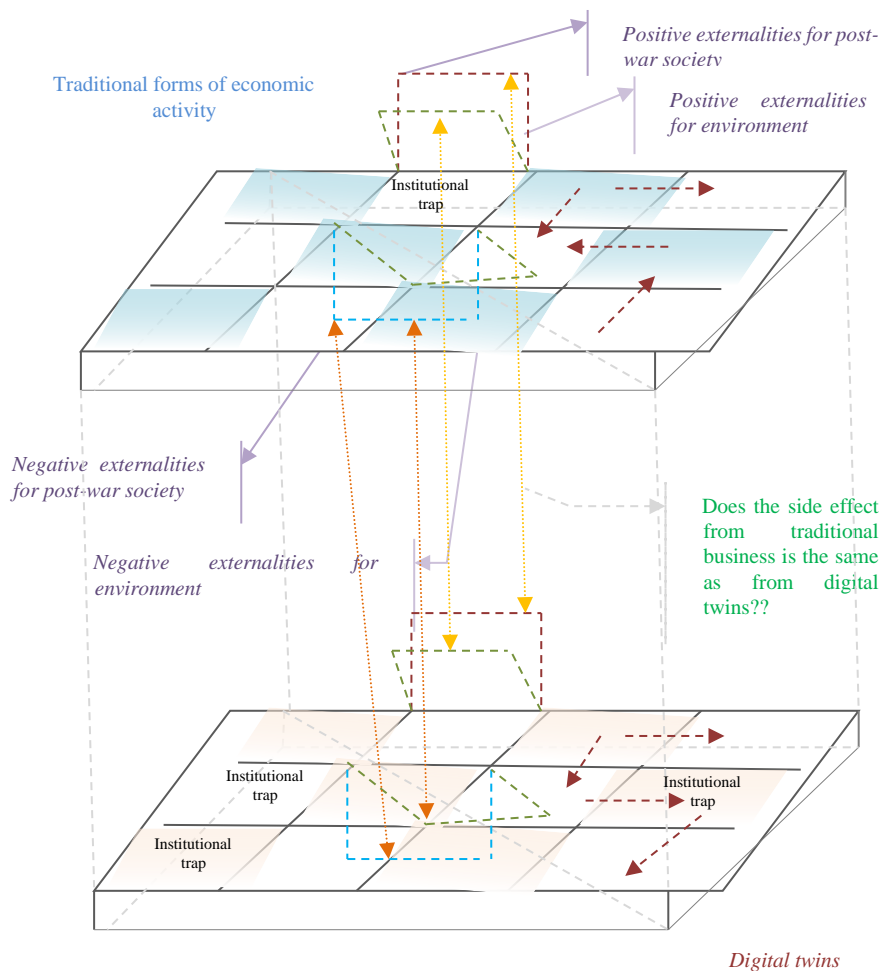


Hypothesis II: The chess matrix market is dynamic. Every cell is in constant motion. Items (cells) move, disappear, or change depending on economic or other circumstances, e.g. degislative changes. The side effect depends from entity's route and cells movement

E.g. *the private entrepreneur paid the fixed tax every month. According the Law of Ukraine «On Use of Payment Transactions Registers in the Sphere of Trade, Public Catering and Services» it became necessary to keep cash records. This legislation has made more difficult*

Source: Own study.

Figure 12. *Digital twin in post-war market – who is it?*



Source: *Own study.*

According to Figure 12, there are a lot of questions, but few answers. So we can discuss next positions:

1. Does the side effect from traditional business is the same as from digital twins, e.g. positive- positive, negative- negative?
2. Can be the side effect from the traditional business negative, but from digital one is positive?
3. Does the traditional marketplace static, and the digital one is dynamic?

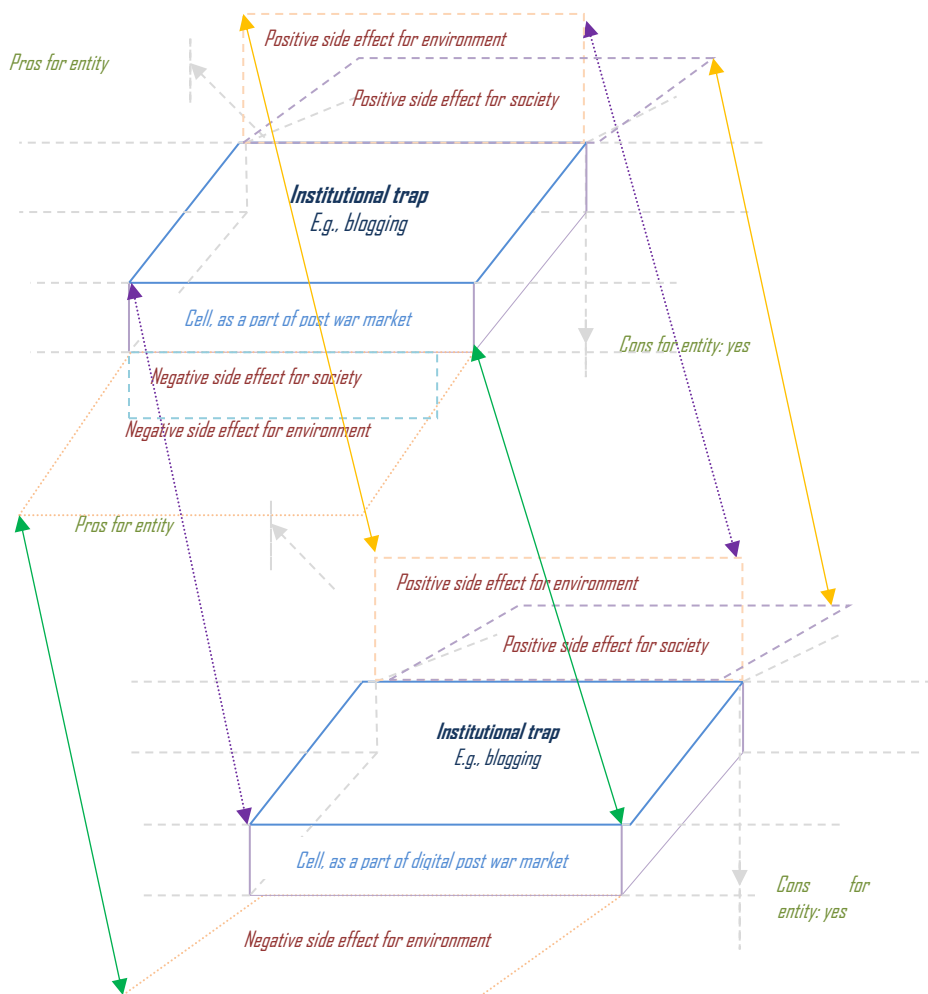
4. Does the level of side effect from traditional business is the same as from digital twins?
5. Is the digital twin always safer for environment than traditional form?
6. In case the traditional post war market and the digital one move the same direction, would be entity's income bigger?
7. What type of investment's sphere is more required: traditional or digital? Can we separate these spheres one from other?
8. Whether side effects of these two activities are directly related one from other? E.g. traditional business form: negative side effect for society vs digital twin: negative side effect for society or environment?
9. Are the institutional traps in traditional post war market and the digital one the same?
10. Do the institutional traps in traditional post war market have a direct impact on the digital twin? (Figure 13).

The side effect can touch society, environment, other business representatives, regions growing. How does every institutional trap influenced on the whole post war market? (Figure 14).

According to Figure 14, we can discuss next positions:

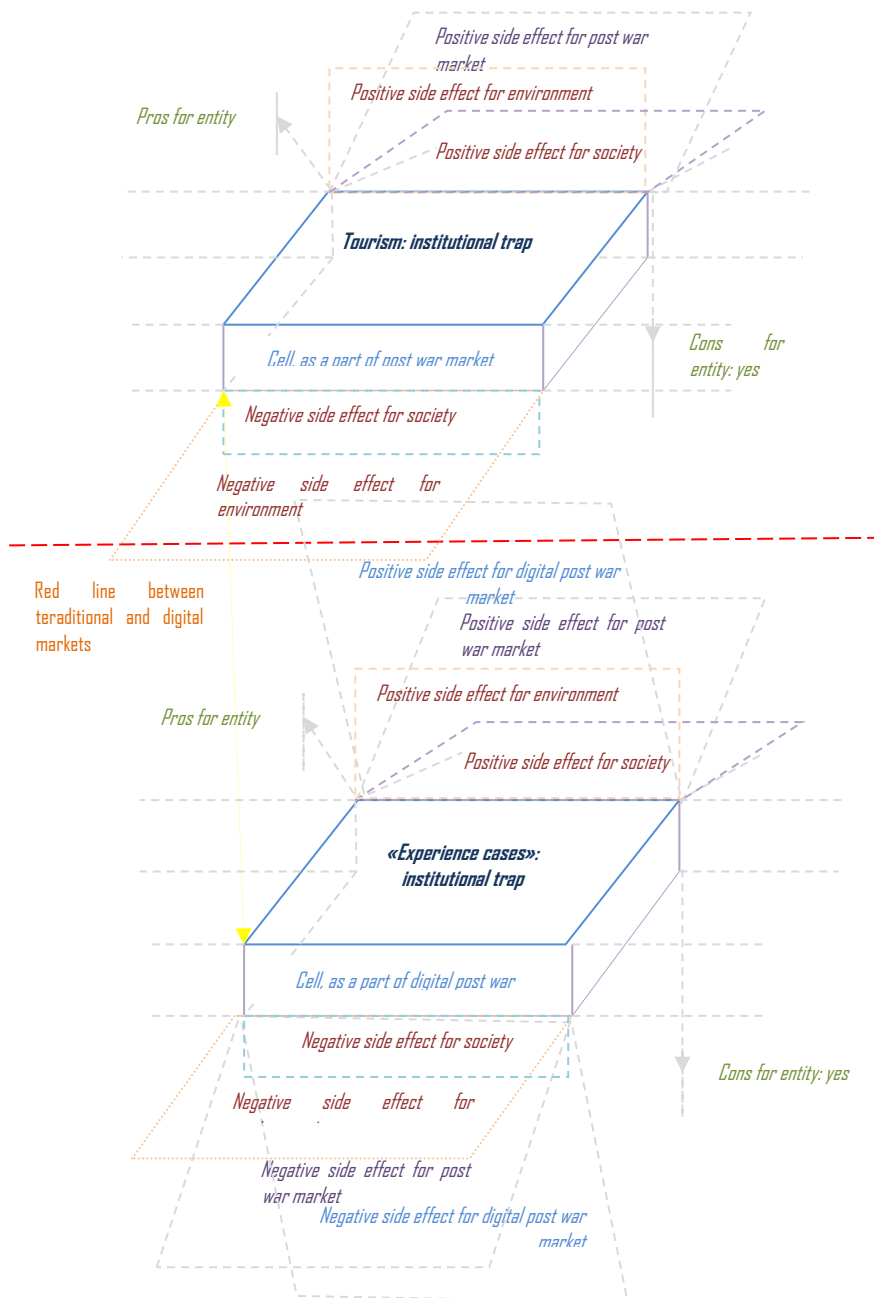
1. How much side effect can be by one institutional trap?
2. Does the institutional trap in traditional post war market launch the same side effect in digital one?
3. Can the positive side effect in digital post war marker cover the negative one in traditional post war market? If not so bad, how good can it be?
4. Does the post war market value depend from the institutional traps or their side effects?

Figure 13. Digital twin in post-war market – who is it?



Source: Own study.

According to several alternative scenarios for each entity, it can conclude that even sufficient logistics is not the key to business development and socially responsible strategy, as insufficient institutional support and a number of institutional pitfalls can be factors that cause the cessation of economic activity.

Figure 14. The matter of digital trap in post war market

Source: Own study.

4. Discussion

This paper occupies the formation of a comprehensive business system development in the post-war society's transformations. Chess business model is a system of planning not only the most cost-effective form of business, but also the side effect on society and the environment.

The post war market in Ukraine is the market of future. We cannot predict the scenario for the post war market's development as a whole one, because it depends on such factors as victory over Russian aggression, the level of destruction and damage to the country. But we can try to model several options for business development, based on market conditions that existed before February 24, 2022. Enterprises can predict the most optimal business development route, taking into account the institutional traps that existed before the war, such as corruption, etc.

Also, it should take into account that the society will no longer be tolerant of some institutional traps, such as the payment of envelope salaries. Changing socio-cultural guidelines will lead to new business modeling tools. Ukraine is on the threshold of a new economic path, which is a consequence of a change in the socio-cultural policy of the state.

5. Conclusion

The absence of organizational- institutional, legal, economic and ecological instruments for the provision of the comprehensive economic post war framework inhibits the development and implementation of innovative relationships in the all sectors.

Post war transformation will require significant investment flows, which are not able to be providing by the state. During the cooperation of public authorities and entrepreneurs, it is necessary to take into account the specifics of the actual economic activity and the area of its implementation. The chess business modeling can provide the most legislative and economics' comfortable route for both. Why do we have so many open questions? By asking the right open-ended questions, it strives to fulfill future customers' expectations and demands. Using the chess business modeling we can find not only right comprehensive decision for business, also avoid many problems of the pre-war economy in Ukraine. The side effect of each business route can be an indicator of economic and environmental success for the entrepreneur. Should we think about these issues now? Modeling is the first step in post war renovation economy of Ukraine.

The study was conducted in order to identify the main possible milestones related to the implementation of economic and environmental reform in the context of decentralisation in the post war period.

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