The Open Access Journal of Resistive Economics (OAJRE)
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Introduction:

Recently, resistive economics joined the economics literature. One of the main requirements for such economy is self-reliance, due to achieve excellence. Some definitions of resistive economics regard the persistence against sanctions. And other ones emphasize on reinforcement of national economy. First time, in 2005, resistive economics was introduced after the blockade of Ghaza, And in recent years, tighten sanctions against some countries causes to promote this approach and takes into consideration. The goal of resistive economics is to use the internal sources potential against sanctions and restrictions with minimal crisis.

The approach and process of Protecting the national production, labor and capital has different economic, political and social aspects. The main one is resistive economics which could be effective due to the development and uprising of economy’s activities. Resistive Economic can be evaluated as one of the pillars that support the national production which neutralizing sanctions by relying on domestic production. And implementing its principles lead to revolution in the national production.

According to rapidly growth of scientific connections which comes from promotion and usage of online web, we aim to publish an open access journal. Nowdays, regarding many open access journals indexed in Citation Indices and high impact factor of some of them, authors became eager to them.

On the other hand, the open access movement’s attempts to start rising level of scientific journals which includes professional evaluations. This entire increases the attractiveness of participating in the movement.

By using the open access publishing, this journal is looking for promoting discussion about resistive economics. All published papers are peer reviewed and would have acceptable scientific standards and also would reveal the various aspects of resistive economics according to economics literature.
The Words of Managing Editor:

Toroudshomal Research Company According to its missions for protecting and promoting the intellectual heritage of humanities aims to establish annual conferences in order to cover the new and critical humanities Themes. Also we would publish the outcome of these events which are accessible for all researchers to improve the scientific boundaries and to remedy the increasing real-world problems.

So, for the first time, we publish the international journal of resistive economics in five scope: Economy under sanctions, Oil and gas economics and management, Military Management and Economics, Green economics and Entrepreneurship. And we are trying to introduce the object of resistive economics’ discussions to international R&D centers and make it popular between economists.

We are pleased with the open access, because:
- It is publicly accessible on the web.
- Readers have right to read, print and share it with others freely.
- In traditional publishing, authors leave many of his/her rights to publishers. But in open access, all rights belong to authors.
- This open access journal is peer reviewed.
- It needs fewer cost and time to accept article.

Mohsen Kelich,
Director of Toroudshomal Research Company
The Words of Economics Editor in Chief:

History of scientific journal in Iran began from 3 decades ago. And so far it has remarkable progress in terms of quantity and quality. Retrospect at journals published in developed countries; we face to Evolution of screening and evaluating of paper and method of publishing which moved from traditional ones to electronic publishing. However, the vision and purpose of authors from publishing papers and publishers' responsibilities in this scope has been somewhat changed. Maybe part of this improvement could be attributed to legislation which itself is acceptable. Providing access to scientific and scholarly content placed readers in a potential and strategic situation which plays a fundamental role in informing.

The potential Background of resistive economics _like special committees to develop scientific papers, scientific centers against sanctions for compiling new strategic approaches in the economics literature and also scientific journal management method, implementing electronic publishing could be found in the goals of Toroudshomal Research Company as a scientific collection. Open access journal of resistive economics would publish regularly despite of many ups and downs in the International events. In this way we need the Cooperation of professors, teachers and researchers.

We hope to be able to draw bright prospect in this field by benefit from the valuable comments of teachers, students, and researchers and take large steps in this path.

Dr. Pedram Davoudi
Economics Editor in Chief
The Words of Management Editor in Chief:

Sustainable growth and development in general and economic development specifically, is one of the most important and most controversial issues and challenges in the world, and the national aspirations of the people of all nations.

One of the most important effective factors of such a noble aspiration is having an effective and efficient interaction among countries. And resistive economics, sanctions (economic, political, cultural, social), regardless of their causes, are the most important challenges (opportunities and threats) in this field.

Management of sanctions challenges and turns them into good opportunities in different countries and it depends on the function of the effectiveness of three M. Top Management, Middle Management and Operational Management (Malaysia's new economic architect, Mahatyr M)

Although managers can take many tools to manage the challenges associated with the sanctions that may be applied, but certainly in the role of creativity, innovation and idea creation, the most unique feature of entrepreneurs (economic, political, cultural, social) is undeniable and unmatched.

Talent and creativity, innovation and idea creation found in all humans, but the degree of expression, appearance, and use it in different ways is not based on a specific rule. And conferences are ideal place to hunt for any kind of creativity, innovation and ideas.

Creativities, innovations and ideas targeted and trapped at the journal and opportunities and new solutions will be facing managers and administrators, so that they can use them to create knowledge-based wealth (economic, political, cultural, and social) to manage the different aspects of the sanctions act.

Dr. HassanAli Aghajani
Management Editor in Chief
Aims and Scope:

Themes and Sub-themes

- Military Economics and Management

The economics of war:
- War military expenses
- Background and state of economy prior to war
- Peacekeeping funding
- Recent wars and world economy
- Most military countries and their economy
- Value of economic lost in war
- Defense budget
- Defense subsidy

Military service:
- Relation between Military service and GDP, Entrepreneurship, Unemployment, …
- Troops costs
- The impact of Conscription on economic growth

Military treaty organization:
- North Atlantic Treaty Organization (NATO) and world economy
- Southeast Asian Treaty Organization (SATO) and world economy
- Nuclear Non-proliferation Treaty (NPT) and world economy

Military Markets:
- International arms market
- Global military expenditures
- Arms producing companies
- Arms trade
- Arms race model
- Small arms market
- Global military expenditures
- FDI in military project
- Ratio of military expenses to GDP
- Black market arms
- World arms exporters and imports
- Money laundering in arms market
- Military new technologies and economic growth
Military companies/institution:
- Private military companies/forces (PMCs/PMFs)
- Military labor market
- Joint military projects expenditures or joint Military project costs
- Military pay scale

Military management:
- Human Resource Management
- Management of Financial Resources
- Industrial Management
- Business Management
- Knowledge Management
- Production Management
- Risk Management
- Strategic Management
- Time Management
- Crisis Management

Cyber war and economy:
- Economic infrastructure and cyber war
- International monetary transactions and cyber war
- Economic Information Warfare

Terrorism and world economy:
- Financial flows of terrorist organization
- Expenditure of national & international security
- Terrorism operations and world economy
- September 11, 2001 attack and world economy
- The effect of weapons of mass destruction (biological, chemical, Nuclear, …) on world economy
- History of military-economic thought and theories
- Militaristic Keynesianism
- Golden arches theory
- Economy under Sanctions

- Explain the economic conditions of sanctioned countries (China, Libya, India, Cuba, Iran, Iraq, Pakistan, South Africa, Syria, Sudan, Afghanistan, Russia, North Korea, etc.) from the perspective of macro-economic variables (exports, imports, privatization, inflation, interest rates, exchange rate, GDP, per capital income, economic growth, tax, unemployment, etc.)
- Explain the economic conditions under sanctions from the perspective of micro-economic variables (market, consumer, manufacturer, price, utility, and the price elasticity of production, replacement and return of …)
- Economic sanctions and social variables (general health, health, Racism, Poverty, migration, food security, environment, Social Capital, etc.);
- Economic sanctions and international politics and law (human rights, democracy, humanitarian aid, etc.)
- The impact of sanctions on the production and trade of energy (oil, gas, etc.);
- Terms of economic sanctions and international monetary and financial systems;
- The impact of sanctions on banking and international trade;
- Economic sanctions and doing business, entrepreneurship, SMEs;
- The impact of international sanctions on international organizations and companies, FDI & FPI;
- The Nature and Models of Sanction;
- Sanctions Management;
- Typology of Sanctions;
- Sanctions and Resistive Economics;
- Management of Organizations and Companies in Terms of Sanctions;
- Reduce the Social and Economic Effects of Sanctions;
- Geneva Agreement and Its Consequences;
- Military Economy;
- Oil and Gas Economics and Management

Theories and Concepts:
- Economic Development and oil and gas
- Geoeconomics and oil and gas
- Oil and gas planing

Oil and gas’s demand and supply
- Trade and markets
- Market Forecasting
- Oil and gas pricing
- Consumption of oil and gas product
- The analysis of international energy demand and supply

Alternative Energy sources
- Renewable Energy
- The global climate change and international cooperation on reducing carbon emissions;
- New energy saving technology
- Other sustainable energy
- Ecological economy, circular economy and low-carbon economy;
- New technologies and design for energy efficiency

Investing in oil and gas
- Financing of oil and gas
- Contracts
- Energy Security and Risk Assessment
- Project management and investing
- Investment in related projects such as refineries and petrochemical

Domestic and international Policy making
- Exporter’s policies
- Importer’s policies

International organization
- OPEC
- GPEC
- G20
- Green economics

Theories and Concepts:
- Environmental Economics
- Environmental Management
- Green industries
- Welfare Economics
- Development Economics
- Agricultural Economics
- Eco Socialism
- Green tourism
- Eco Feminism And Women's Economics
- Strengthening economic competitiveness,
- Foreign Direct Investment
- Game Theory

Structural Questions:
- privatization
- Good Governance
- Doing Business
- NGO’s
- Consumerism
- Civil Society And Attitudes To Acceptable Economic Activity
- Environmental Management As An Industry
- Taxing
- Off Shoring
- Outsourcing
- Multinationals And Tariff Barriers
- Polluter Pays
- …

International Institutions and Corporate Activity:
- Bretton Woods
- EU
- UN
- IMF
- World Bank
- WTO
- UNCTAD
- GATTs
- Sovereign Wealth Fund
- Trading Blocks
- New Protectionism
- International Governance
- Roles And Activity Within Multinationals
- Procurement
- Processes Of Globalization At A Practical Level
- Limiting The Power Of The Multinationals

**New Initiatives and Cases, Experience and Applications:**
- Green Solutions
- Green intelligence
- Eco Taxes
- Resource Management
- Renewable Energy
- Green Management
- Green building
- New Economic Indicators
- Zero Waste
- Reuse
- Recycle, Repair
- Quality Of Life And Consumerism
- Information Technology and environments

**New Paradigms of the Economy:**
- Biosphere, Non-Human Species
- Women and Minorities
- Post Agricultural Social And Economic Requirements And Organization
- Planning To Reduce Surplus And Not To Harness It For Power Over Others
- New Fertilizer and environmental effects

**Social Justice:**
- Less Developed Countries
- Subsistence Economies
- Purchasing Power Parity
- Income Distribution
- Entrepreneurship

Entrepreneurship:
- Theoretical and Empirical principles about entrepreneurship and value creation
- Entrepreneurship and its role in sustainable development (economic, political, cultural, social)
- Entrepreneurship in various areas of science and technology (With the goal of creating jobs and creating value and wealth).
- The role of entrepreneurship in resistive economics.
- Entrepreneurship, from the perspective of Islam and Quran.
- Green Entrepreneurship.
- Entrepreneurship under sanctions.
- Military Entrepreneurship
- And ……..

Incubator centers and science and technology parks:
- Theoretical and Empirical principles about Incubator centers and parks
- Specialized clinics for consultation and brokerage firms, operating and maintaining knowledge-based businesses.
- Knowledge-based Businesses (companies) and commercialization of science and technology
- And ……..

Management in the knowledge Based SMEs:
- Theoretical and empirical principles about knowledge – based SMEs
- Production, financial markets, innovation, legal issues, strategic management, management consulting for SMEs.
- Business clusters
- Green business.
- And ……..

The relationship between universities, industry and society:
- Theoretical and experimental study on the relationship between universities and industry.
- University and industry mutual expectations (community)
- Community/ Models / Patterns / Frameworks for effective communication between universities and industry
• And ……..

**Third Generation Universities (entrepreneur and value creation):**

• Theoretical and Experimental Community on Third Generation Universities.
• The role of universities in society development of (economic, political, cultural, social).
• The role of Third Generation Universities in Resistive Economics
• Academic entrepreneurship and entrepreneurial University – Commercialization of knowledge and academic technology.
• Universities, Colleges, departments, new generations’ courses.
• Programs and entrepreneurial training systems in universities.
• University and industry mutual expectations (community)
• Community/ Models / Patterns / Frameworks for effective communication between universities and industry
• And ……..

**Commercialization and academic goods & services sale (education, research and technology):**

• Knowledge- based wealth creation (economic, cultural, social and political) in the different academic areas.
• Shops, exhibitions, academic products markets technology (didactic, research and technology),
• Academic products sales and after-sales service chain (supply chain management) (didactic, research and technology),
• Businesses clusters, unions, guilds and organizations which support academic goods and services (didactic, research, technology).
• Models / frameworks / patterns of employment and money making in the various spheres of academic production (education, research, technology and others).
• And ……..

**Entrepreneurial relationships with various academic courses:**

• Theoretical and Empirical principles about entrepreneurship and academic courses.
• Entrepreneurship, employment and money making in different humanity courses (management, economics, accounting, law, political science, geography, literature, language, religion, theology, jurisprudence and Islamic law, physical education and sports science, etc.).
• Entrepreneurship, employment and money making in various fields of basic sciences (chemistry, physics, biology, mathematics, biochemistry)
• Entrepreneurship, employment and money making in various fields of Agricultural sciences (Agronomy, Horticulture, Soil Science, Landscape, Animal Science, etc.).
• Entrepreneurship, employment and money making from various fields of engineering (Electrical engineering, Civil engineering, Mechanical engineering, Industrial engineering).
Entrepreneurship, employment and money making in various art courses (architecture, urban planning, tourism, restoration and archeology, industrial design, painting, graphic design, clothing design and sewing, cinema, film, theater, acting, script-writing, crafts, art research, public relations.)

Entrepreneurship, employment and money making in various medicine courses (medicine, nursing, physiotherapy, laboratory, dentistry)

Entrepreneurship in defense and military fields and others…..

And ……..

**And other freebies in line with the objectives of the conference:**

Knowledge Based Economy.

And ……..
Editorial Board:

“Science does NOT know Borders”

The Open Access Journal of Resistive Economics (OAJRE) kindly invites distinguished research scientists (only with PhD) to join in and work on the scientific committees and editorial review boards of the journals and conferences. Membership in the Open Access Journal of Resistive Economics (OAJRE) scientific committees and editorial review boards can open windows of opportunity for your professional growth and development as free-of-charge. Through special scientific committees and editorial review boards, and numerous occasions for scientific exchange with colleagues, journal of resistive economics gives distinguished research scientists the power to enhance their knowledge, skills, and professional options.

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kelich@toroudshomal.com

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The Impact of the US Economic Sanctions on Health in Cuba

Narges Akbarpour Roshan¹ and Mohsen Abbasi²

ABSTRACT: Economic sanctions, as a tool of coercive foreign policy, have been very popular in the 1990s. Sanctions are supposed to impose economic hardship on the country and make the government change its policies. However, there is strong evidence that sanctions cause severe civilian hardship. Reports suggest that sanctions can seriously harm the health of people who live in targeted nations. For this reason, the object of this paper is to address the health effects of economic sanctions in Cuba, because of its long history in facing sanctions. For more than a half of a century, the USA has imposed economic, commercial, and financial sanctions against Cuba. These sanctions have influenced the health of Cubans in many ways. This paper reviews the impact of economic sanctions on health, health services and food security. To do so, desk research and macro analysis have been used in the paper. Finding shows that sanctions have limited access to health services, medicine and adequate food in Cuba. According the results, sanctions have had negative and destructive effects on the health of Cubans and they have violated human rights. The performance of Cuban government has reduced their consequences, though.


¹ Ph.D student in Economics, University of Mazandaran, Babolsar, Iran. Email: narges.akbarpur@gmail.com
² B.A. student in Accounting, University of Mazandaran, Babolsar, Iran. Email:mohsen.abbasi.74@gmail.com
1. INTRODUCTION

Economic sanctions, as a tool of coercive foreign policy, are planned by one or more governments for various political purposes to put pressure on the target country through restricting economic relations. Economic sanctions are often regarded as an alternative to war or violent measures. The concept of economic relations is all kinds of economic interactions, including trade and financial relations. Countries impose sanctions in order to coerce other countries to change policies that they don't tolerate, for example to stop nuclear proliferation (Petrescu, 2010). After the cold war, sanctions have widely been seen as a less violent alternative to war; So that it was considered as a ‘peaceful, silent, and deadly remedy’ that no nation can resist (Garfield, 1999). For this reason, many economic sanctions have imposed by countries and the United Nations after that. Although the purpose of imposing sanctions is to put pressure on governments, there is strong evidence that economic sanctions cause severe civilian hardship and profound social and economic dislocation. Sanctions not only reverse development gains but also may increase suffering and death among civilians, particularly among the vulnerable groups, and their destructive effects cannot be mitigated by humanitarian assistance alone. Because of that, the macroeconomic and political impacts of sanctions have been heavily debated. To reduce the negative effects of sanctions, humanitarian policies and actions have developed and comprehensive analyses have done for some sanctioned countries (Morin and Miles, 2000).

The impacts of sanctions on health and health services are not limited to problems relating to the supply of medicine. Health and health services also depend on water and sanitation infrastructure, electricity and other functioning equipment such as ambulances and hospital facilities. Furthermore, the consequences of lack of access to foreign goods - both final goods, such as drugs and intermediate goods, such as raw materials and machinery for domestic production - affect the health of the citizens. Even if humanitarian exemptions were effective, which in practice they are often not, this would not be sufficient to maintain health and health services. Weakened physical and medical infrastructure on the one hand and decreasing revenue of sanctioned state- as a consequence of embargoes- for financing investment, maintenance and running costs on the other hand, reduce the ability of the health system to deliver services and respond to medical emergencies. As the quantity and quality of health services decline, people are less motivated to continue using them. Simultaneously, access and user rates go down because the civilian population is forced to engage in alternative social and economic activities to cope with the macroeconomic impact of sanctions on employment and livelihoods (Garfield, 1999).

The purpose of this paper is to address the health effects of economic sanctions in Cuba, because of its long history in facing with sanctions. We analyzed macro data to study some aspects of health impacts of economic sanctions in Cuba. Data come from World Bank, United Nations International Children's Emergency Fund (UNICEF), World Health Organization's (WHO), Foods and Agriculture Organizations (FAO) and the United States Census Bureau. Using data on health, health services and food security in Cuba, we find that sanctions have limited access to health services, medicine and adequate food in Cuba, and they have violated human rights in many ways.

The remainder of the paper is organized as follows. Section 2 presents a brief review of the literature on the relationship between economic sanctions and human right, and economic sanctions and health. Section 3 presents the method used in this paper. Section 4 dedicated to describe the effects of economic sanctions on health, medical care and food security in Cuba. Finally, conclusion of the paper is presented in Section 5.

2. LITERATURE REVIEW

2.1. Economic Sanctions and Human Rights

Imposing sanctions on a country is to interrupt its communications, diplomatic and/or economic relations (Garfield, 1999). Economic sanctions, as a widely used tool of foreign policy, take many forms. Sanctions include mandating trade restrictions (for example, limiting imports from or exports to a sanctioned nation), freezing bank accounts, limiting international travel to and from an area, imposing additional tariffs, and

3. This term was used by US president Woodrow Wilson.
exerting other pressures that are intended to slow key economic activities (Morin and Miles, 2000). Table 1 clearly shows the topology of economic sanctions. A traditional argument in favour of the use of sanctions over military conflict has been that even if they have a lower probability of success than military conflict, the relatively low cost to both the sender and target might still make them a viable policy option. Unlike military conflict, sanctions are not intended to kill citizens of the target country (Drezner, 1998), so they are considered to be a more humane coercive policy (Allen and Lektzian, 2013). In line with this idea, after the cold war, as the global market expanded and direct military intervention by the major powers became less important (Garfield, 1999), many countries and the United Nations have increasingly used economic sanctions instead of military intervention to compel nations to end civil or extraterritorial war or to reduce abuse of human rights. Repercussions from these measures influence a country’s economic development and, therefore, can also affect the overall welfare of a nation’s population. In contrast to war’s easily observable casualties, the apparently non-violent consequences of economic intervention seem like an acceptable alternative. But reports suggest that economic sanctions can seriously harm the health of persons who live in targeted nations (Morin and Miles, 2000).

Following the experience with sanctions in the 1990s, critics began to challenge this logic, arguing that sanctions are a potentially immoral foreign policy tool that indiscriminately and unjustly targets poor and innocent elements of society (Allen and Lektzian, 2013). Indeed, sanctions that have been imposed to force the government of target country to respect human rights may violate human rights themselves. Table 2 listed human rights which may be violated by economic sanctions. International human rights were articulated to protect basic human needs (Garfield et al., 1995). In addition to political and civil rights, the 1948 Universal Declaration of Human Rights refers to a person’s right to a standard of living that allows him or her to maintain health and well-being; this includes access to food and medical care (Article 25) (United Nations General Assembly, 1948). In 1976, the International Covenant on Economic, Social, and Cultural Rights proclaimed that all persons had a right to the highest attainable standard of physical and mental health; it called on all involved countries to ensure the prevention, treatment, and control of diseases and to create conditions that would ensure the delivery of medical care (Articles 12.1) (United Nations General Assembly, 1966). Although these responsibilities may be viewed primarily as domestic matters, the repercussions of economic sanctions imposed by other nations often result in a fundamental contravention of the spirit of the International Covenant (Morin and Miles, 2000).

International law permits parties to deviate from some provisions of human rights treaties during war, but humanitarian law is increasingly relied upon to protect human rights and balance military necessity with humanity (Doswald-Beck and Vite, 1993). The Fourth Geneva Convention of 1949 and the Additional Protocols of 1977 mandated the unhindered delivery of food and medical supplies to civilian populations in time of war and declared that medical centres, hospitals, and other components of the public health infrastructure that help to combat contagious diseases and epidemics must be maintained and protected. It seems reasonable to expect that economic sanctions and war would operate within similar humanitarian constraints (Morin and Miles, 2000). Indeed, humanitarian goods, such as food or medicine, are often exempt from sanctions. However, this can have little practical effect if, for example, foreign currency is not available to import such goods, foreign bank accounts are frozen, or borders are closed (Garfield et al., 1997). In addition, virtually unattainable terms of trade, such as strict requirements for export licenses or restrictions on transportation, make it difficult to deliver food and medicine (Kirkpatrick, 1996).

The relation between the health of a country’s population and the state of its economy is complex and interdependent. In its 1993 report investing in health, the World Bank supported the view that a healthy population leads to economic growth; conversely, economic growth can lead to a healthier population. Therefore, it becomes apparent that stifling the economic lifeline of a country through sanctions curtails not only the development of the economy but also the health of individual persons and violates cases of human rights (Morin and Miles, 2000). For this reason, humanitarian agencies (for example, UNICEF), religious organizations, networks of professional health organizations and human rights groups have all been critical of sanctions. While no simple or uniform policy on sanctions may be possible, the major humanitarian effects can be anticipated and prevented or attenuated. It should be noted that accurate assessment of sanction’s effects is very important. In addition, affected countries can be helped to meet the basic needs of
their citizens during sanctions, and their ability to recover and develop can be strengthened in the process (Garfield, 1999). Medical ethics is also an important factor in improving and promoting people's health in sanctioned countries. Individual physicians are professionally obliged to relieve suffering and to promote health. In addition, physicians and their professional organizations must advocate the health of the public. Clinically, this refers to promoting the highest standards of medical care for individual patients. At a societal level, physicians must be wary of the tension that may exist between government policy and the healing duty of medicine (Morin and Miles, 2000).

Another important link can be seen between medicine, health, and human rights. The health of individuals and of populations, as emphasized respectively by medicine and public health, can encompass more than physical and mental health and the prevention of disease, disability, and death. The definition of health that was developed by the World Health Organization refers to a “state of complete physical, mental and social well-being” (Mann et al, 1994). In this regard, “the promotion and protection of human rights and promotion and protection of health are fundamentally linked” to ensure the advancement of human well-being. This proposition concurs with the belief that higher socioeconomic status and better health status are related (Morin and Miles, 2000).

Table 1. The Topology of Sanctions

<table>
<thead>
<tr>
<th>Diplomatic and Political Measures</th>
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</thead>
<tbody>
<tr>
<td>• Public protest, censure, condemnation;</td>
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<tr>
<td>• Postponement, cancellation of official visits, meetings, negotiations for treaties and agreements;</td>
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<tr>
<td>• Reduction, limitation of scale of diplomatic representation affecting status of post, diplomatic personnel, consular offices;</td>
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<tr>
<td>• Severance of diplomatic relations;</td>
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<tr>
<td>• Withholding recognition of new governments or new states;</td>
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<tr>
<td>• Vote against, veto admission to international organizations; vote for denial of credentials, suspension or expulsion; removal of headquarters, regional offices of international organizations from target.</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Cultural and Communications Measures</th>
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<tbody>
<tr>
<td>• Curtailment, cancellation of cultural exchanges, scientific cooperation, educational ties, sports contacts, tourism;</td>
</tr>
<tr>
<td>• Restriction, withdrawal of visa privileges for target nationals;</td>
</tr>
<tr>
<td>• Restriction, cancellation of telephone, cable, postal links;</td>
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<tr>
<td>• Restriction, suspension, cancellation of landing and over flight privileges; water transit, docking and port privileges; land transit privileges.</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Financial Measures</th>
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<tbody>
<tr>
<td>• Reduction, suspension, cancellation of development assistance, military assistance;</td>
</tr>
<tr>
<td>• Reduction, suspension, cancellation of credit facilities at concessionary or market rates;</td>
</tr>
<tr>
<td>• Freeze, confiscation of bank assets of target government, target nationals;</td>
</tr>
<tr>
<td>• Confiscation, expropriation of other target assets;</td>
</tr>
<tr>
<td>• Freeze interest, other transfer payments;</td>
</tr>
<tr>
<td>• Refusal to refinance, reschedule debt repayments (interest, principal);</td>
</tr>
<tr>
<td>• Vote against loans, grants, subsidies, funding for technical or other assistance from international organizations.</td>
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<tr>
<th>Commercial and Technical Measures</th>
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<tbody>
<tr>
<td>• Import, export quotas;</td>
</tr>
<tr>
<td>• Restrictive licensing of imports, exports;</td>
</tr>
</tbody>
</table>
• Limited, total embargo on imports, exports (Note: arms embargoes);
• Discriminatory tariff policy, including denial of most favoured nation trade, access to General Preferential Tariff;
• Restriction, cancellation of fishing rights;
• Suspension, cancellation of joint projects;
• Suspension, cancellation of trade agreements;
• Ban on technology exports;
• ‘Blacklisting’ those doing business with the target;
• Curtailment, suspension, cancellation of technical assistance, training programmes;
• Ban on insurance and other financial services;
• Tax on target’s exports to compensate its victims.

Source: Garfield (1999)

<table>
<thead>
<tr>
<th>Human Rights</th>
<th>Relevant United Nations Instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right to life</td>
<td>UDHR (3); ICCPR (6)</td>
</tr>
<tr>
<td>Right to liberty and security of person</td>
<td>UDHR(3); ICCPR(9)</td>
</tr>
<tr>
<td>Right to freedom of opinion and expression</td>
<td>UDHR(19); ICCPR(19); CRC (13)</td>
</tr>
<tr>
<td>Right to adequate food, and to be free from hunger</td>
<td>UDHR(25); ICESCR (11)</td>
</tr>
<tr>
<td>Right to the highest possible standard of physical and mental health</td>
<td>CRC(24); ICESCR(12)</td>
</tr>
<tr>
<td>Right to the provision of medical assistance and healthcare</td>
<td>UDHR(25); ICESCR(12); CRC(24)</td>
</tr>
<tr>
<td>Right to adequate clothing and housing</td>
<td>UDHR(25); ICESCR(11)</td>
</tr>
<tr>
<td>Right to adequate environmental conditions</td>
<td>ICESCR(12)</td>
</tr>
<tr>
<td>Right to a standard of living adequate for health and well-being</td>
<td>UDHR(25); ICESCR(11); CRC(27)</td>
</tr>
<tr>
<td>Right to education</td>
<td>UDHR(26); ICESCR(13); CRC(28)</td>
</tr>
<tr>
<td>Right to work, and to just and favourable conditions of work</td>
<td>UDHR(23); ICESCR(6,7)</td>
</tr>
<tr>
<td>Right to social security</td>
<td>UDHR(22); ICESCR(9); CRC(26)</td>
</tr>
<tr>
<td>Right to participate in government</td>
<td>UDHR(21); ICCPR(25)</td>
</tr>
</tbody>
</table>

Source: Hoskins (1998)

Relevant Human Rights Instruments:

* Universal Declaration of Human Rights (UDHR)
** International Covenant of Economic, Social and Cultural Rights (ICESCR)
*** Convention on Civil and Political Rights (ICCPR)
**** Convention on the Rights of the Child (CRC)

2.2. Economic Sanctions and Health

Economic sanctions are often blamed for human suffering. Even officials involved in imposing economic sanctions admit that sanctions could have an adverse effect on the population.⁴ There are many ways in

⁴ In an editorial in the Annals of Internal Medicine, Madeleine Albright, former U.S. Secretary of State, mentioned that “When the United Nations or the United States imposes sanctions against a regime; It does not intend to create unnecessary hardships for innocent people, especially children and infants. Good intentions, however, do not automatically translate into good results” (Albright 2000).
which economic sanctions affect the population in the sanctioned countries. One of the most direct ways they affect health is through the lack of proper nutrition. Cuts in food imports lead to shortages in calories intake and to under nutrition which makes children and other vulnerable groups such as the chronically ill more susceptible to tuberculosis, measles, and other infectious diseases. Increases in prices of food lead to poor nutrition during pregnancy that can have a negative effect on the baby (Garfield, 1997). Sanctions can affect children also through water. Sanctioned countries experience shortages of materials and substances needed to clean the water which leads to less access to clean water. Dirty water causes diseases in people, particularly children and the vulnerable group (Garfield and Santana, 1997). In addition, reduction of raw materials and intermediate goods for the production of sanitary products increases the negative impact of sanctions on health (Petrescu, 2010).

Lack of medicines is another problem caused by embargo in the embargoed countries. Imports of authorized medicines drop and imports of unauthorized and counterfeited drugs increase which lead decreases in efficiency of these drugs and severe side effects (Garfield, 1999). Lack of proper medicines leads the authorities to encourage the pharmacists to prepare old fashion remedies and the population to self-diagnose and to use traditional cures (Kandella, 1997). Although drugs and food are usually excluded from the sanctioned list, there is not adequate foreign currency for imports of these goods due to decrease of export in sanctioned countries. Even if there is sufficient foreign currency, the exchange is usually very difficult. As a result, drug shortages will be widespread in countries under sanctions. While it might be possible to produce some vital and rare drugs in sanctioned country, but decrease in the import of raw materials needed for drug production is an obstacle to deal with the lack of drugs. Furthermore, due to lack of foreign currency, the exchange rate is likely to rise, increasing prices of imported goods. Thus, foreign currency shortage, difficulty of currency exchange among foreign banks and the sanctioned country and increase in prices of raw materials needed for domestic production may increase prices in the sanctioned country. Hence, the purchasing power of people for buying goods (for example foods and medicines) and services (such as medical and health services) is reduced, and the health of people is negatively affected.

Economic sanctions affect the quality of health care and can have huge negative implications on people's health. Insufficient vaccines in sanctioned countries can lead to outbreaks of diphtheria contagious diseases among children. Shortages of oil, gas, and electricity mean frequent power cuts and fuel shortages which affect emergency medical services, heating hospitals, and patient transportation to hospitals. These poor conditions in hospitals lead to increase in mortality. Hospitals also have fewer supplies and perform fewer tests (Garfield, 1999). Also, sanctions can indirectly affect health through air pollution. Because of restrictions on the entry of new technologies, and the use of obsolete machinery in sanctioned countries, air pollution may rise, and therefore the health of population- especially vulnerable population- may be at risk. Sometimes countries under sanctions produce some essential goods for living to compensate their shortages. But usually due to lack of access to updated technology and knowledge for producing these goods, the produced goods may have low quality, and this may affect the health of citizens. These are only some of the channels through which sanctions affect the health and mortality of people- particularly children. In section 4 we will discuss some instances of the health effects of sanctions in Cuba.

3. Methodology

To determine the impacts of sanctions on the health of Cubans, desk research method is used. We have considered health effects of sanctions in three aspects: the impact of sanction on health indices, health services and food security. Macro analysis is applied to show the effects of sanction. In this regard, we have used data from World Bank, United Nations International Children's Emergency Fund (UNICEF), World Health Organization's (WHO), Foods and Agriculture Organizations (FAO) and the United States Census Bureau.
4. ECONOMIC SANCTIONS AND HEALTH IN CUBA

4.1. An Overview of Economic Sanctions against Cuba

The United States first placed an embargo on Cuba in 1960 ("The Cuban Embargo", 2014, April 5). Although the embargo has always had a negative effect on the Cuban economy, its effect on the health care system had been significantly offset by subsidized trade and aid from the former Soviet Union, countries in the socialist bloc, and Western Europe. Public health and universal access to free medical care have been priorities of Fidel Castro’s government since its inception in 1959. Polio, malaria, tetanus, diphtheria, and human rabies have been eradicated from the island (American Association of World Health, 1997). General practitioners and nurses delivered preventive care through the Family Doctor Program; one physician and one nurse were personally responsible for each neighbourhood of 100 to 200 Cuban families. Cuba had twice as many physicians per capita as the United States, and the infant mortality rate was 10 per 1000 births (Barry, 2000). In the 1980s, Cuba was one of only several developing countries with infant, child and maternal mortality rates approaching those of developed countries. But while the other ‘good outcome’ countries – China, Costa Rica, Kerala state in India and Sri Lanka – also had moderate to high rates of economic growth, per capita income in Cuba declined (Garfield, 1999). However, in the late 1980s and early 1990s, health care statistics in Cuba were far better than in other Latin American countries, and Cuban physicians were in demand in underserved foreign countries because of their expertise in public health promotion (Barry, 2000).

However, the socialist bloc crumbled in the late 1980s, and the U.S. embargo suddenly became much more of a threat to the Cuban health care system. Cuba lost $4 to $6 billion annually in subsidized trade, and almost overnight, imports required hard currency (American Association of World Health, 1997). Cuba no longer had access through the eastern bloc to the raw materials needed to manufacture pharmaceutical products, and lack of currency made it difficult to purchase drugs and medical equipment in western Europe. With the demise of subsidized trade, the absence of aid from the former Soviet Union, and the progressive tightening of the U.S. sanctions, Cuba’s model health care system has become threatened by serious shortages of medical supplies. After that, profound changes have occurred in Cuban health care system that was once considered as a preeminent model for developing countries (Barry, 2000). In 1992, the US embargo was made more stringent with the passage of the Cuban Democracy Act. The Cuban Democracy Act severely aggravated the situation by prohibiting foreign subsidiaries of U.S. companies from trading with Cuba (Barry, 2000). All US subsidiary trade has since been effectively prohibited. Ships from other countries were not allowed to dock at US ports for six months after visiting Cuba, even if their cargoes are humanitarian goods (Garfield, 1999). This act reflects one of the few sanctions worldwide that explicitly includes food and further defines trading restrictions that block access to medical supplies.

The U.S. sanction against Cuba, one of the few that includes both food and medicine, has been described as a war against public health with high human costs (Eisenberg, 1997). But pursuant to Trade Sanctions Reform and Export Enhancement Act (TSRA) in 2000, "the President shall terminate any unilateral agricultural sanction or unilateral medical sanction that is in effect as of October 28, 2000" (TSRA, 2000, October 28, article 7202(b), p1517). Of course, this title shall not affect those unilateral agricultural or medical sanctions that prohibit, restrict, or condition the provision or use of any agricultural commodity, medicine, or medical device that is (A) controlled on the United States Munitions List established ; (B) controlled on any control list established under the Export Administration Act of 1979 or any successor statute ; and (C) used to facilitate the design, development, or production of chemical or biological weapons, missiles, or weapons of mass destruction (TSRA, 2000, October 28, article 7203(2), p1517). However, according to the UN Development Programme, Cuba has already achieved three out of eight Millennium Development Goals (universal primary education, promoting gender equality and empowering women, and reducing child mortality) and is on track to achieve the five other goals by 2015 or is very likely to do so (Amnesty International, 2009). In spite of Cuba’s achievements, the US embargo has been a significant factor in

5. During détente in the 1980s sanctions were relaxed, permitting Cuba to purchase goods from US companies through third countries.
hindering further progress on meeting the MDGs; because the embargo affects the capacity of the Cuban government to progressively work towards the realization of some economic, social and cultural rights. Nevertheless, in 2009, President Obama lifted restrictions that had prevented US citizens from visiting relatives in Cuba, and sending remittances to them (Tutton, 2009). But despite numerous criticisms, no decision has been taken to stop the sanctions on Cuba and the U.S sanctions on Cuba have continued for over 5 decades ("The Cuban Embargo", 2014, April 5).

4.2. Data Analysis Results

4.2.1. The Effects of Sanctions on Health Indices

Infant, child and maternal health outcomes in Cuba have already been among the best in Latin America, and have continued to improve. For example, neonatal mortality rate in Cuba was 2.6 per 1000 live births in 2012. Also, infant and under-5 mortality rate in 2012 have been reported 4.3 and 5.5 per 1000 live births, respectively. Despite the pressures of sanctions and a big drop in available calories, we can see a continuous improvement in these indicators during the considered period (Figures 1, 2 and 3). In addition, about 100 percent of all births (99.9%) occur in health institutions; and the percentage of all births below 2.5 kg is decreased. UNICEF has reported that the maternal mortality ratio was about 33.4 per 100,000 births in Cuba in 2012 (Figure 4); According to the latest available data, improvement in these indicators continues.

Some of the factors associated with these good outcomes are a strong family doctor program, food rationing, routine monitoring of weight and weight gain among pregnant women and young children, medical surveillance of pregnancies, long-range investments in general education issues (Garfield, 1999). In Cuba, preventive medical care, diagnostic tests, and medication for hospitalized patients are free, and many medical services are subsidized by the government. Cuban government is responsible for the bulk of health expenditure; so that the share of public health expenditure of total health expenditure was over 94 percent in 2012 (Figure 5). Per capita expenditure on health in terms of PPP index was close to $ 460 in 2011, which about 407 dollars has been done by the public sector (Figure 6). More than 11.5 percent of total government expenditure is allocated to health in 2012, however, it has significantly decreased compared with 15 percent in 2011 (Figure 7). Cuba greatly has improved its health systems during sanctions. Despite the tightening of the embargo, Cuban authorities have thus been able to make more efficient and timelier decisions on the use of very scarce resources (Garfield, 1999). With this performance, Cuba has been among the most successful countries in health indicators.

It should be noticed that infant, child and maternal health outcomes in Cuba have had short-term setbacks in some years. During the worst years of the economic decline and retooling of the health system, in 1993 and 1994, were poor health outcomes recorded. For example, maternal mortality among Cubans rose sharply from formerly low levels during this period. Extraordinary efforts to provide extra food rations to pregnant women and revamp birthing procedures rapidly reversed this trend (Garfield, 1999). During this time, infant mortality was reduced; the decreasing rate of infant mortality was declined, though. Subsequent efforts to improve maternal nutrition and conditions for delivery led to a subsequent decline in this rate. But along with a drop of GDP growth from 12.1 percent in 2006 to 1.45 percent in 2009, Cuba entered to a recession once again, and this was effective in the growth of maternal deaths to 46.9 per 100,000 live births in 2009. However, after serious efforts in the area of health system, improvement in the index resumed in 2010 (Figure 4).

Death rate per 1,000 people in Cuba decreased from 8.83 in 1960 to 5.83 in 1978; but after that, it has totally increased, so that the number of deaths per 1,000 people was 7.62 in 2012 (Figure 8). This increase is almost entirely due to an increase in mortality among those aged 65 years and up. This is mainly due to shortages of essential medicines and laboratory reagents for those with chronic diseases requiring regular monitoring. However, according to World Bank data, life expectancy in Cuba was approximately 79.07 years in 2012.

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Neonatal mortality rate is the number of neonates dying before reaching 28 days of age.
(Figure 9), which was far higher than the average of life expectancy in Latin America and the Caribbean (74 years).
Figure 5. The private, public and total expenditure on health in Cuba

Figure 6. Per capita health expenditure (PPP) in Cuba

Figure 7. Share of public health expenditure of total public expenditure in Cuba

Figure 8. Death rate in Cuba

Figure 9. Life expectancy at birth in Cuba
4.2.2. The Effects of Sanctions on Food Security

The Cuban Democracy Act is one of the few sanctions worldwide that explicitly includes food and further defines trading restrictions that block access to medical supplies (Barry, 2000). About half of all proteins and calories in Cuba were imported prior to sanctions. But after imposing sanctions on Cuba, food import, as well as other goods import, has decreased. Importation of foodstuffs declined about 50 percent from 1989 to 1993, and milk production declined by 55 percent from 1989 to 1992 due to loss of imported feed and fuel. Reduced imports and a shift toward lower quality protein products are significant health threats: a daily glass of milk used to be provided to all children in schools and day care centres through age 13; it was subsequently provided only up to age six. It is estimated that sanctions on Cuba create a ‘virtual tax’ of 30 percent on all imports. These have higher purchase and shipping costs because they have to be purchased from more expensive and more distant markets (Garfield, 1999). After the passing of the 2000 Trade Sanctions Reform and Export Enhancement Act, which eased exports of agricultural products and medicine to Cuba, the process for obtaining licenses for exports of agricultural products to Cuba has been speeded up. So that licenses can be issued within 14 days. The Department of Commerce authorizes the use of these licenses. Due to this act, the United States exports to Cuba have increased: the total US exports to Cuba from 2001 to 2008 increased from US$ 7.2 million to US$ 711 million, according to the data from the US Census Bureau. But after that, it began to decrease, reached to $ 359 million in 2013. Total US food export to Cuba from 2004 to 2013 is given in table 3. As it is shown, US food exports increased from about $380 million in 2004 to $662 million in 2008. But then, in a decreasing trend, it reached to $335 million in 2013.

Increase in US food exports to Cuba after the passing of TSRA, has had a significant impact on the import of food and food supply in Cuba. This is clear in Figure 10; increase in food imports started in 2002, mainly by the increase of US import to Cuba. In 2008 in which the US food exports to Cuba reached to its peak, total food imports in Cuba increased suddenly, and then, by reducing the import of US food products, total food imports in Cuba significantly reduced. Furthermore, Figure 11 shows the supply of food (includes vegetal and animal products) in Cuba; in this chart it is clear that during the worst years of the economic decline in Cuba (1993 and 1994), per capita food supply at kilo calories per day greatly reduced (to about 2,300 kilo calories per day). But after that, government measures make the situation better and therefore, an increasing trend of food supply began. In recent years, in spite of its light fluctuation, food supply has remained constant close to 3200 kilo calories per day. It should be noticed that food production as well as food imports affects the trend of food supply. In this regard, the trend of food production index in Cuba is shown in figure 12. Despite the improvement in the process of importing food to Cuba, UNICEF reported that Cuba was unable to import nutritional products destined for children and for consumption at schools, hospitals and day care centres. This had an adverse effect on the health and nutritional status of the population and is believed to be a contributing factor in the high prevalence of iron deficiency anaemia (Figure 13). In 2007, this condition affected 37.5 percent of Cuba’s children under three years old, according to UNICEF. Cuba can import these products from other countries, but there are major shipping costs and logistical challenges to contend with.

The Cuban approach to get rid of these problems has been based on the dual policies of equity and priority for vulnerable groups. Cuban government which began a food rationing program in 1962 to guarantee all citizens a low-priced basket of basic foods is now skilled at rationing food and other scarce goods. The Cuban government allocates a large amount of budget annually to subsidize the food ration; as a result, the cost of each food ration in Cuba is far less than other countries. Distribution of food, clothing, and other scarce goods to target groups, including women, the elderly and children, is facilitated via social service institutions, workplaces, pre-schools and maternity homes. These measures have neutralized a large part of

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7 For example; It has since used mass media and workplaces to promote the use of bicycles in place of cars, animals in place of tractors and trucks (for which fuel and parts are lacking), and the consumption of vegetable-based foods in place of scarce animal protein. In hospitals, rooming-in and other baby friendly changes have further promoted breast feeding. Eighty per cent of all births now occur in such baby friendly hospitals. The percentage of breast feeding raised from 63 percent in 1990 to 97 per cent in 1994.
the negative effects of sanctions on the nutrition. For example, according to the World Health Organization statistics, the percentages of underweight children (low weight for age) and stunting children (low height for age) decreased from 3.4 and 7 percent in 2000 to 1.3 and 3.7 percent in 2005, respectively. As figure 14 shows, prevalence of undernourishment in Cuba reached to about 22 percent of the population in 1994. But then, along with the proper performance of government, it began to decrease and it reached to 5 percent in 2000; after that prevalence of undernourishment has fixed at this level. Figure 15 shows the depth of the food deficit in Cuba. The depth of the food deficit which is measured by the World Health Organization (WHO) indicates how many calories would be needed to lift the undernourished from their status, everything else being constant. Analyzing of this indicator for Cuba shows that after a big depth of the food deficit in Cuba in 1995 (159 kcal per day), depth of the food deficit in Cuba decreased to about 4 kcal per day in 2013. Furthermore, Figure 16 represents the prevalence of food inadequacy according to the Food and Agriculture Organization (FAO) data. This figure also confirms the previous findings from figures 14 and 15. It shows that after reaching its peak in 1994 (about 37 percent), the prevalence of food inadequacy in Cuba began to decrease, so that it reached to only 5.8 percent in 2001.

**Figure 10. Food and animals import in Cuba**

**Figure 11. Food (vegetal and animal products) supply in Cuba**
Figure 12. Food production index in Cuba

Figure 13. Prevalence of anemia among children in Cuba

Figure 14. Prevalence of undernourishment in Cuba
4.2.3. The Effects of Sanctions on Health Services

The US trade embargo on Cuba is endangering the health of millions by limiting Cubans' access to medicines and medical technology. The embargo restricts the export of medicines and medical equipment from the US and from any US-owned company abroad (Tutton, 2009). Although embargo legislation since World War II has usually included exemptions for humanitarian goods, the 1992 embargo legislation on Cuba does not permit sales of food and requires unprecedented ‘on-site verification’ for the donation of medical supplies. The legislation does not state that Cuba cannot purchase medicines from US companies or their foreign subsidiaries; however, such license requests have usually been delayed or denied (Garfield, 1999). This makes the export of medical equipment and medicines to Cuba very difficult in practice. As US pharmaceutical and biotechnology companies merged with European companies, Cuban physicians had to cope with a progressive lack of critically needed medicines, diagnostic tools, vaccines, and medical machinery that had previously been available or affordable (Kirkpatrick, 1996).

Several public health catastrophes have occurred in 90s due to the reduction of foods, health products and medicine (Barry, 2000). For example, an epidemic of blindness that was partially attributed to a dramatic decrease in access to nutrients, an outbreak of the Guillain–Barre’ syndrome caused by lack of chlorination chemicals, and an epidemic of lye ingestion in toddlers due to severe shortages of soap. For more detailed information see Barry (2000).

A large part of all new medicines produces by US-patented companies. Thus, due to US sanctions on Cuba, these are not available in Cuba at any price except by smuggling. Physicians sometimes spend much of their day not treating patients but going from centre to centre in search of a scarce medicine for a single patient. In addition, ambulance access has become scarce as spare parts are increasingly difficult to obtain (Garfield, 1999). Also physicians in Cuba always worry that an international supplier will be bought out by a US company, leaving medical equipment without replacement parts and patients without continuity of medications (Tutton, 2009). Furthermore, sanction does not permit the sale of active ingredients or raw materials to the Cuban pharmaceutical industry. Therefore, domestic production of drugs is subject to problems. Products which are patented in the US are covered by the embargo. This particularly affects AIDS treatments because the latest medicines for AIDS treatments are usually covered by US patents, and therefore these products are rare in Cuba. In spite of facilitating the process of obtaining license for exports of US agricultural products to Cuba after the passing of TSRA in 2000, obtaining license for exports of medicine and medical devices to Cuba still hasn't eased and continues to be subject to the requirements provided for in the Cuban Democracy Act (Amnesty International, 2009). The Department of Commerce, in its 2008 Report on Foreign Policy-Based Export Controls, clearly states the restrictions in exporting goods.
and medicines to Cuba. Table 3 summarizes the values of US exports to Cuba of medical and pharmaceutical products from 2004 to 2013 as provided by the US Census Bureau. Donations of medicine and medical equipment to Cuba also face restrictions from the US authorities. An export license is required even when the donation fulfils a humanitarian purpose. For instance, in June 2007, officials at the Maine-Quebec (Canada) border stopped and pushed back a shipment of medical donations for Cuba (Amnesty International, 2009). According to data from the World Health Organization, death by non-communicable diseases (including cancer, diabetes mellitus, cardiovascular diseases, digestive diseases, skin diseases, musculoskeletal diseases, and congenital anomalies) in Cuba has increased due to the lack of access to medicines and medical equipment needed for diagnosis and treatment of chronic diseases. Death by non-communicable diseases as a share of total deaths increased from 79.7 percent in 2000 to 85.5 percent in 2012. During more than 5 decades of sanctions, patients with AIDS and cancer are the most affected ones (Tutton, 2009).

Table 3. US food, medicinal and pharmaceutical exports to Cuba from 2004 to 2013 (in US dollars)

<table>
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<td>0</td>
<td>36</td>
<td>0</td>
<td>0</td>
<td>29</td>
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<td>Medicinal equipment</td>
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<td>396</td>
<td>753</td>
<td>366</td>
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<td>30</td>
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<td>80</td>
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<tr>
<td>Pharmaceutical Preparations</td>
<td>1298</td>
<td>1747</td>
<td>2111</td>
<td>1862</td>
<td>940</td>
<td>487</td>
<td>536</td>
<td>843</td>
<td>3096</td>
<td>1560</td>
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<tr>
<td>Total US Medicinal and Pharmaceutical Exports to Cuba</td>
<td>1796</td>
<td>2151</td>
<td>2871</td>
<td>2228</td>
<td>1235</td>
<td>517</td>
<td>718</td>
<td>923</td>
<td>3096</td>
<td>3309</td>
</tr>
<tr>
<td>Total US food export to Cuba</td>
<td>380285</td>
<td>336329</td>
<td>314407</td>
<td>415603</td>
<td>662143</td>
<td>499417</td>
<td>326318</td>
<td>325609</td>
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</table>

Source: Bureau of the Census, United States, Foreign Trade Statistics (www.census.gov).

4.3. Findings

We analyzed macro data to study the health impacts of sanctions in Cuba. We distinguished three aspects relating to the health area and considered the effects of sanctions on each of them. Particularly we study the impacts of sanction on health indices, health services and food security. Finding on first aspect shows that despite pressure imposed by sanctions, Cuba has succeeded to improve health indices continuously. Reviewing the impacts of sanctions on food security presents that sanctions have reduced Cuban government's ability to provide universal access to basic foods. However, proper efforts of government, for example in food rationing, have been an effective tool to compensate the negative effects of sanctions on food security. After the passing of the 2000 Trade Sanctions Reform and Export Enhancement Act, the export of US agricultural products to Cuba has eased. Easing the export of agricultural products to Cuba by TSRA in 2000 has had a positive impact on reducing food shortage, and it has helped government to realize the right to adequate food. But UNICEF data confirm that Cuba is still unable to import adequate nutritional products destined for children and for consumption at schools, hospitals and day care centres.

9 For detailed information see 2008 Report on Foreign Policy-Based Export Controls, p. 34.
Finally, findings on the impacts of sanction on health services show that the export of medicines and medical equipment to Cuba is still limited, and it endangers the health of Cubans. This especially affects the treatments of chronic patients. Limited access to medicines and medical equipment prevents realization of the right to the provision of medical assistance and healthcare. It should be noted that proportion of death by communicable diseases and maternal, prenatal and nutrition conditions has decreased. As discussed before, this outcome represents an acceptable performance of Cuban government in this area. But death by non-communicable diseases in Cuba has increased due to the lack of access to medicines and medical equipment needed for diagnosis and treatment of chronic diseases.

5. **CONCLUSION**

Economic sanctions have been a common instrument in foreign policy in 20th century. Although economic sanctions are imposed to force governments to change their policies, they have irreparable effects on people's health in sanctioned countries. Because economic sanctions result in shortages of food and medical supplies, their most severe consequences are often felt by the persons who are least culpable and most vulnerable; untoward health sequela usually occur in civilian rather than military populations. It has been shown that women and children younger than 5 years are particularly affected by food shortages and weakened public health infrastructures caused by embargoes. In general, economic sanctions have unintended and deep effects on the health and nutrition of vulnerable populations in sanctioned country. Because of this, economic sanctions are exposed to huge ranges of critics by humanitarian groups. This study examined the effects of US sanctions on the health of Cubans. To do so, a large set of latest data is used, and this makes the paper different from other similar works. Especially using data from various sources, we analysed macro data in three aspects relating to the health area. The results are consistent with other studies; showing that economic sanctions have affected the considered aspects of health, especially food security and medical services, in Cuba. However, government thwarted much of the negative consequences of sanctions by properly designed programs, rationing and subsidizing to increase food security, and promoting medical services. These results have important policy implications. First, sanctioned governments should be able to make efficient and timely decisions on the use of very scarce resources after facing economic sanctions. To show a proper reaction, sanctioned governments must try to realize the health impacts of sanctions and their magnitudes carefully. Second, humanitarian aid should be provided immediately after the onset of the sanction to reduce the negative consequences of sanctions on health.
REFERENCES:


The Role Of Sanction On Effectiveness Of Total Tax On Foreign Savings In Iran

Dr. Jafar Qaderi\textsuperscript{10}, Behnam Izadi\textsuperscript{11}

\textbf{ABSTRACT:} Considering the fact that governments are always looking to increase the amount of foreign savings and their share of tax revenue from the total income, therefore this paper investigates the role of sanctions on effectiveness of total tax on foreign savings in Iran’s economy during the period 1391-1352. Utilized function is linear and utilized technique is ordinary least squares (OLS). To demonstrate the effectiveness of international sanctions during the 80s, in the function, the virtual variable has been used that the coefficient for this variable is negative and it is statistically significant. Inflation rate and per capita GDP are used as explanatory variables. Estimation results show that by increasing the total tax, foreign savings increase which confirms the Plyz hypothesis In addition to the general level of prices, foreign savings reduce and by increasing per capita gross domestic product, foreign savings increase.

\textbf{KEYWORDS:} total tax, foreign saving, ordinary least squares.

\textsuperscript{10} economics associate professor at the University of Shiraz, Email: JGhaderi@rose.shirazu.ac.ir

\textsuperscript{11} MA student, Department of Economics, University of Shiraz, Email: Izadi.behnam@yahoo.com
1. INTRODUCTION

Nowadays, governments face a diversity of functions performing which involves heavy costs. To finance such expenditures governments gain revenues in various manners. In general, government revenues are divided into two categories: tax incomes and non-tax incomes. Non-tax incomes are those gained by governments’ economic activities. The main feature of such incomes is their arbitrariness. Therefore, they are usually irregular and unreliable. Some examples of non-tax incomes include profits resulting from governmental monopolies in oil and petroleum, gas, railways, electricity, etc, or revenues of selling or renting public real estate. But, the most common and important way of financing government expenditures is taxation. Taxation is one of the most effective economic tools of every government since it is considered as a main way of implementing financial policies besides generating revenues for the government. Furthermore, since paying tax is an obligatory task for everyone, this source of income is a regular and reliable one despite non-tax incomes. Thus, compared to other sources of government income it can be said that the higher the share of taxation in financing government expenditures, the lower the rate of undesirable economic effects of employing other sources (Hendrickson and Myles, 2006).

The effect of taxation on economy has been discussed from different viewpoints. Among these effects are taxation impacts on economic activities such as employment and savings. In general, the value of every country’s total annual production is shares among production elements based on their role and contribution rate in production procedures. Here, each production element saves a portion of its income which is not spent on current expenditures. In other words, to renounce spending a portion of income and ignoring instant joys is called saving. The concept of saving is one of the most difficult economic concepts the exact measurement or estimation of which is considered as one of the most complicated statistical problems (Bernanke, Olekalns and Frank, 2008).

Following the Islamic Revolution Iran has always been facing various sanctions the severity of which increased during 2000s as a consequence of discussions on nuclear programs. Obviously, the main problem of Iranian economy is the production and supply section. International sanctions also target these sections. By exerting such sanctions the rate of domestic production falls as a result of dependency of production section on foreign countries. On the other hand, inflation rate increases because of domestic demand and deficient local supply. This leads to more expensive price of domestic goods than foreign ones and a reduction in exports. Then the government has to import final goods to meet domestic demands. Consequently, the status of foreign part of the economy in worsened so that imports are increased and exports are decreases; this results in an overall reduction in payments balance. Hence, the negative effect of sanctions on foreign part of the economy is demonstrated (Mankiw, 2014).

Considering what mentioned above, the present paper aims to investigate the impact of international sanctions on an aspect of taxation macroeconomic effect, namely the effect of total tax on foreign savings in Iran. Thus, we review the literature on the topic in the next section. Then, we employ statistical tables and charts to examine procedure of the two main variables (foreign savings and taxation in Iran) during a period since 1973 to 2012. Besides, Iran is compared to other countries on the two variables. Next, we introduce pattern structure, define variables and data collection methods and use Ordinary Least Squares (OLS) to estimate the introduced pattern. We also discuss on coefficients significance and analysis of taxation effect on foreign savings based upon resulted parameters. Finally, the general conclusion and preservative suggestions to improve the status are presented.

2. LITERATURE REVIEW

Since no research is directly performed on the topic, here we review studied performed in two fields: 1. Savings and its macroeconomic effect, 2. Taxation and its macroeconomic role.

<table>
<thead>
<tr>
<th>Author</th>
<th>Topic and goal</th>
<th>Model and variables</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singh</td>
<td>Examining long-term effect of domestic savings on growth were examined using</td>
<td>Neoclassical hypotheses on growth were examined using</td>
<td>Results indicated a mutual cause and effect relationship between</td>
</tr>
<tr>
<td>Year</td>
<td>Research Topic</td>
<td>Methodology</td>
<td>Conclusion/Findings</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2010</td>
<td>Income and economic growth in India</td>
<td>Maximum accuracy estimation system</td>
<td>Countries with lower income rates have a direction of cause and effect relationship from economic growth to income growth and is mutual in countries with high income rates.</td>
</tr>
<tr>
<td>2006</td>
<td>Cause and effect relationship between domestic savings and economic growth in 13 economies with different income rates during a period from 1960 to 2001</td>
<td>Granger's cause and effect test</td>
<td>Foreign subsidies and domestic savings led to economic growth in all studies countries.</td>
</tr>
<tr>
<td>2005</td>
<td>Investigating the relationship between foreign aids, domestic savings and economic growth in African countries from 1965 to 2000</td>
<td>Maximum accuracy method based upon Panel Assembly</td>
<td>Foreign subsidies and domestic savings led to economic growth in all studies countries.</td>
</tr>
<tr>
<td>2003</td>
<td>Examined the relationship between savings and economic growth in a research on net introduced foreign resources, savings and economic growth in Spain</td>
<td>Granger's cause and effect test</td>
<td>According to Solo's model, higher saving rates lead to more economic growth. Also, there is a direct relationship between total savings, household savings and government savings or income.</td>
</tr>
<tr>
<td>2011</td>
<td>A general pathology of Iranian private section savings from 1974 to 2007</td>
<td>Introducing effective factors on savings including oil revenues, inflation rate and Coefficient and hypotheses using test model</td>
<td>Positive effects of oil income growth and employed population and negative impacts of and increase in real interest rate of long-term deposits on private section savings.</td>
</tr>
<tr>
<td>2010</td>
<td>A research on the effect of natural disasters on savings in Iran</td>
<td>Employing the Auto Regressive Distributed Lag (ARDL) method</td>
<td>Results indicated that natural disasters increase the tendency to save money.</td>
</tr>
<tr>
<td>2010</td>
<td>Investigating effective factors on environmental saving rate from 1959 to 2004 in Iran</td>
<td>Employing OLS, ARDL and ECM (Error Correction Model)</td>
<td>Long and short term economic growth and long and short term oil income alteration have, respectively, positive and negative effects on national savings rate.</td>
</tr>
<tr>
<td>2008</td>
<td>Investigating effective factors on national savings from 1966 to 2004 emphasizing Ando Modigliani's hypothesis of Life Span</td>
<td>Estimating through ARDL method</td>
<td>Concluded that age structure of the population is an effective factor on formation of national savings.</td>
</tr>
<tr>
<td>2008</td>
<td>Examining the effect of financial system on Iran's private savings respecting the fact that capital accumulation</td>
<td>Johansson – Yousilius's method of co-accumulation</td>
<td>They concluded that developing financial system through quantitative development of banking indicators negatively.</td>
</tr>
<tr>
<td>Authors</td>
<td>Title</td>
<td>Methodology</td>
<td>Findings</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td>Namvar (2006)</td>
<td>The Open Access Journal of Resistive Economics (OAJRE) / Volume 5, Number 29-35, 2014 Published Online December 14</td>
<td>is the most important factor in economic growth</td>
<td>affects Iran's private savings</td>
</tr>
<tr>
<td>Bahrami, Aslani (2005)</td>
<td>Studying experimental determinants of private section's savings in Iranian economy from 1968 to 2001</td>
<td>Investigating effects of factors such as disposable incomes, social welfare costs, etc, for post war years</td>
<td>Finally, it was demonstrated that improving the status of financial market is the best and most important way of increasing savings of the private section</td>
</tr>
<tr>
<td>Bretschger, Hettich (2002)</td>
<td>The effect of globalization on taxation composition in 14 member countries of the OECD from 1967 to 1996</td>
<td>Employing Panel data and estimation method</td>
<td>Results indicate the negative, significant effect of globalization on coordinated tax incomes</td>
</tr>
<tr>
<td>Bertschger (2010)</td>
<td>Examining the effect of economic openness on coordinated taxes and the influence of coordinated taxes on economic growth of 12 member countries of the OECD</td>
<td>Using Panel Data from 1965 to 1999</td>
<td>Results suggest that trade liberalization through coordinated tax leads to an increase in economic growth</td>
</tr>
<tr>
<td>Pupongsa (2009)</td>
<td>The effect of trade liberalization on taxation and government revenues and imports and exports rate and the influence of trade liberalization on enhancing efficiency of financial system in Thailand from 1960 to 2005</td>
<td>ARDL method</td>
<td>It is demonstrated that trade liberalization leads to an increase in imports and exports rate, efficiency of financial system and a reduction in state and tax incomes</td>
</tr>
<tr>
<td>Brafu-Indaidoo and Obeg (2008)</td>
<td>The relationship between import liberalization and tariff taxation revenue in Ghana</td>
<td>OLS method</td>
<td>They concluded that there is a negative relationship between the two economic variables</td>
</tr>
<tr>
<td>Agbeyegbe et al (2006)</td>
<td>The relationship between exchange rate changes, trade liberalization and tax revenue using Panel Data from 1980 to 1996</td>
<td>GMM method</td>
<td>There is no significant relationship between trade liberalization, total taxation income, trade taxation income and consumption taxation income</td>
</tr>
<tr>
<td>Tosun (2005)</td>
<td>The Tax Structure and Trade Liberalization</td>
<td>Using Panel Data of 65 countries worldwide including 16 Middle East</td>
<td>Results suggest that similar to non-OECD member countries, taxation does not enhance along</td>
</tr>
</tbody>
</table>
and North African countries from 1980 to 1997

Khalili, Rahmani, Najafi (2011)
Studying the relationship between unreliability of government's taxation revenues and economic growth in Iran from 1961 to 2005
Using co-accumulation and vector error correction techniques
Results of long-term and short-term models indicate a negative, significant relationship between unreliability of tax revenues and economic growth

Akbarian et al (2007)
The relationship between trade liberalization and government's tax revenues from 1966 to 2005
Using ARDL method
Results suggest that trade liberalization considerably reduces total tax revenues of the government since most domestic industries are state ones

3. THE PROCEDURE OF FOREIGN SAVINGS AND TOTAL TAXATION IN IRAN

The total value of every country's annual production is distributed among owners of production sections proportionate to their role and contribution. Besides, a part of this value goes to the government in the form of tax. Each of the mentioned sections spends a share of its revenues (money) on current consumption costs and save the rest of the money as deposit in banks and other financial and monetary institutions. To avoid spending a portion of money and ignoring instant joy of consumption is called saving. Total savings of every country is composed of three parts:

1- Government saving including savings of the government and state economic institutions

2- Foreign savings (commercial balance)

3- Private savings including savings of individuals and privately held companies

1.3. Investigating the Procedure of Saving In Iran

Savings equipment is a main determinant of investment and economic growth rate. Chart 1 presents the procedure of foreign savings in Iran. Clearly, the greatest figure of foreign savings belongs to the year 1973 which can be justified respecting the increase in oil price in early 1970s and its influence on exports revenue. After 1973, the rate of foreign savings begins to degrade. Islamic Revolution of 1978 in Iran worsened the reduction of foreign savings. During the war with Iraq (1980 – 1988) Iran experienced the lowest level of foreign savings ever. Because of consumption limitations and imports control resulting from the war foreign savings started to increase. Savings started a considerable enhancement at early 1990s and reached its highest rate after the Revolution in 1993 and 1994 as the Structural Modification Plan was implemented in Iran. Again, passing this period, the savings reduce but in a slower manner. Another period of saving enhancement was experienced after 1998 as a result of oil price increase.
Chart 2 shows changes in the ratio of foreign savings to total savings. During the studied period, the ratio had the greatest value in 1973. Then, it started to degrade until the beginning of Iraq war. Of course, it must be noticed that the degrading process was intensified because of the Islamic Revolution of 1978. The ratio moved upward during war although fluctuations were experienced in that period. Early 1990s witnessed rapid and strong enhancing process with a peak in 1994 and 1995 along with implementation of Structural Modification Plan. The upward movement of the ratio continued until 2011 despite slight available changes.
Table 1 present data pertaining to ratio of foreign savings to total savings of 8 countries from 2001 to 2011. According to the table, the lowest and highest ratios were seen in Pakistan and Germany, respectively. During the considered period Iran had an average ratio of 1.16%. The higher the ratio the stronger is contribution of foreign savings in total savings.

<table>
<thead>
<tr>
<th>Year</th>
<th>France</th>
<th>Germany</th>
<th>India</th>
<th>Australia</th>
<th>Pakistan</th>
<th>England</th>
<th>Canada</th>
<th>Iran</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>7.76014</td>
<td>22.21281</td>
<td>-3.55358</td>
<td>0.237816</td>
<td>-0.34845</td>
<td>-18.5303</td>
<td>20.29336</td>
<td>5.446719</td>
</tr>
</tbody>
</table>

Source: World Bank

Table 1 present data pertaining to ratio of foreign savings to total savings of 8 countries from 2001 to 2011. According to the table, the lowest and highest ratios were seen in Pakistan and Germany, respectively. During the considered period Iran had an average ratio of 1.16%. The higher the ratio the stronger is contribution of foreign savings in total savings.

2.3. Examining Procedure of Total Taxation in Iran

Tax is a part of individuals’ income or assets legally taken by the government to be spent on general and public costs and implementing country’s financial policies. Taxation is one of the most suitable ways of obtaining revenues for governments. Meanwhile, it is considered a tool for financial policies implementation and income redistribution. The main part of Iranian government's revenues comes for taxation irrespective of oil and gas sales. Despite expansion of government contribution in Iran, the country's financial system is weakening every day. The ratio of tax revenues to GDP (Gross Domestic Production) is one of the most important indexes used to compare and analyze the rate of countries' taxation capacity usage. According to Chart 3, the ratio in Iran was about 7.5% in 1973. In 1978 (simultaneous with Iranian Islamic Revolution) it grew to 9% and experienced a reduction during Iraq war. In post war period the decreasing trend was intensified. The ratio reached its lowest level (4%) in 1994 and 1995 along with implementation of the
Structural Modification Plan. Then, it started to grow despite all fluctuations and reached its highest value (108%) in 2009.

Chart 3: The ratio of total tax revenues to GDP

Table 2: The ratio of total tax revenues to GDP (%)

<table>
<thead>
<tr>
<th>Year</th>
<th>France</th>
<th>Germany</th>
<th>India</th>
<th>Australia</th>
<th>Pakistan</th>
<th>England</th>
<th>Canada</th>
<th>Iran</th>
</tr>
</thead>
</table>

Table 2 presents data pertaining to the ratio total tax revenues to GDP of 8 countries from 2001 to 2011. Respecting the Table, the lowest and highest ratio is seen in Iran and Australia, respectively.
4. THE EFFECT OF TAXATION ON SAVINGS

Obviously, taxes have a diversity of economic impacts. The best financial system is one with the most desirable economic effects or one which minimizes unfavorable economic roles. Respecting the need of economic growth to investment and the fact that saving is a min investment resource, undesirable influences of financial and taxation policies on savings may lead to huge macroeconomic destructive effects. Thus, the effect of taxation on savings is of great importance in terms of macroeconomic issues.

5. VARIABLES, MODEL AD MODEL ESTIMATION

$$X_1 = C(1)*X_2 + C(2)*X_3 + C(3)*X_4 + C(4)*D_{53} + C(5)*D_{57} + C(6)*D_{59} + C(7)*D_{TAHRIM} + C(8)$$

The equation above estimates the effect of total tax changes on foreign savings. Variables include:

- X1: Total rate of foreign savings
- X2: Total rate of tax revenue as a percentage of GDP
- X3: Total per capita GDP
- X4: Inflation rate
- DTAHRIM: Virtual variable of international sanctions
- D53: Virtual variable of oil shock
- D57: Virtual variable of Iranian Islamic Revolution (1978)
- D59: Virtual variable of Iraq war

An increase in taxation decreases individual disposable income. When the income is decreased, consumption and, consequently, import of consumer goods reduce. Since exports change slightly in such circumstances, total tax is expected to be positive in this equation. This means that, an increase in taxation is expected to enhance foreign savings.

1.5. Calculation of Model Variables

Total rate of foreign savings: is the ratio of foreign savings changes (difference between export and import of goods and services) to GDP changes. Final rate of total tax revenues: is the ratio of total tax revenue changes to GDP changes. Total per capita GDP: is the ratio of GDP changes to population changes. Data pertaining to the period of 1973 – 2012 of Iran are used to achieve research objectives. Mentioned data were collected from Iran's Statistical Yearbook and economic reports of Central Bank of the Islamic Republic of Iran. Here, static test must be performed prior to estimation and analysis of results of Equation 1 to determine convergence degree of studied series. The test is performed using Augmented Dickey – Fuller (ADF) in Eviews 8 software. Having the static degree determined and the having the fact understood that all variables are in static levels, Ordinary Least Square (OLS) method is employed for final model estimation.

2.5. Main Results and Model Analysis

Unreliable variables invalidate many standard results of econometric models. Granger and New bold (1974) suggested that with unreliable variables making use of OLS regression may lead to Spurious Regression. Therefore, variables' reliability is tested first. In short, reliability means that average and covariance of time series variables are constant during the time and auto covariance remains fixed in different lags of the time series (Abrishami, 2002). Augmented Dickey – Fuller method is used here because of its significance and validity. The test is performed in significance level of 10% results of which are presented in tables 1 and 2.
As Table 1 represents, total rate of foreign savings, total rate of total tax revenue and inflation are reliable based on ADF. According to Table 2 the first order difference of total per capita GDP is also reliable. Having results of variable durability presents, tables 3 and 4 show results of estimations and recognizing tests on Equation 1.

Table 1: Unit Root test for variables level based on Augmented Dickey-Fuller test

<table>
<thead>
<tr>
<th>Variable</th>
<th>Critical value of 1%</th>
<th>Critical value of 5%</th>
<th>Critical value of 10%</th>
<th>ADF statistic</th>
<th>Probability</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total rate of foreign savings</td>
<td>-3.61</td>
<td>-2.93</td>
<td>-2.60</td>
<td>-6.78</td>
<td>0</td>
<td>Reliable</td>
</tr>
<tr>
<td>Total rate of total tax revenue</td>
<td>-3.61</td>
<td>-2.93</td>
<td>-2.60</td>
<td>-5.73</td>
<td>0</td>
<td>Reliable</td>
</tr>
<tr>
<td>Total per capita GDP</td>
<td>-3.61</td>
<td>-2.93</td>
<td>-2.60</td>
<td>1.41</td>
<td>0.99</td>
<td>Unreliable</td>
</tr>
<tr>
<td>Inflation</td>
<td>-3.61</td>
<td>-2.93</td>
<td>-2.60</td>
<td>-3.87</td>
<td>0.005</td>
<td>Reliable</td>
</tr>
<tr>
<td>The effect of sanction on total tax revenue</td>
<td>-3.61</td>
<td>-2.93</td>
<td>-2.60</td>
<td>-4.64</td>
<td>0.0007</td>
<td>Reliable</td>
</tr>
</tbody>
</table>

Source: researcher calculations

Table 2: Unit Root test for the first order difference of variables based on Augmented Dickey-Fuller test

<table>
<thead>
<tr>
<th>Variable</th>
<th>Critical value of 1%</th>
<th>Critical value of 5%</th>
<th>Critical value of 10%</th>
<th>ADF statistic</th>
<th>Probability</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total per capita GDP</td>
<td>-3.61</td>
<td>-2.93</td>
<td>-2.60</td>
<td>-2.88</td>
<td>0.05</td>
<td>Reliable</td>
</tr>
</tbody>
</table>

Source: researcher calculations

As Table 1 represents, total rate of foreign savings, total rate of total tax revenue and inflation are reliable based on ADF. According to Table 2 the first order difference of total per capita GDP is also reliable. Having results of variable durability presents, tables 3 and 4 show results of estimations and recognizing tests on Equation 1.

Table 3: Results of estimating Equation 1

<table>
<thead>
<tr>
<th>Coefficient of explanatory variable</th>
<th>Coefficient</th>
<th>Standard Deviation</th>
<th>t statistic</th>
<th>Probability of t statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>C(1)</td>
<td>5.44</td>
<td>0.67</td>
<td>8.08</td>
<td>0</td>
</tr>
<tr>
<td>C(2)</td>
<td>2.29</td>
<td>0.73</td>
<td>3.11</td>
<td>0.003</td>
</tr>
<tr>
<td>C(3)</td>
<td>-0.021</td>
<td>0.01</td>
<td>2.1</td>
<td>0.0391</td>
</tr>
<tr>
<td>C(4)</td>
<td>1.01</td>
<td>0.53</td>
<td>1.88</td>
<td>0.06</td>
</tr>
<tr>
<td>C(5)</td>
<td>1.75</td>
<td>0.55</td>
<td>3.13</td>
<td>0.003</td>
</tr>
<tr>
<td>C(6)</td>
<td>0.07</td>
<td>0.30</td>
<td>0.23</td>
<td>0.81</td>
</tr>
<tr>
<td>C(7)</td>
<td>-1.02</td>
<td>0.49</td>
<td>-2.06</td>
<td>0.04</td>
</tr>
<tr>
<td>C(8)</td>
<td>-1.13</td>
<td>0.33</td>
<td>-3.39</td>
<td>0.001</td>
</tr>
</tbody>
</table>

R-Squared = 0.69  
Durbin-Watson statistic = 2.24

Table 4: Results of model recognition test

<table>
<thead>
<tr>
<th>Test</th>
<th>Probability</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ramsey test</td>
<td>F = 0.67</td>
<td>Model is stable</td>
</tr>
<tr>
<td>Breusch – Godfrey's auto-correlation test</td>
<td>F = 0.73</td>
<td>There is no correlation between disruption terms</td>
</tr>
<tr>
<td>Breusch – Pagan – Godfrey's test</td>
<td>F = 0.97</td>
<td>There is no Heteroscedasticity among disruption terms</td>
</tr>
</tbody>
</table>

Source: researcher calculations

The coefficient of total tax is positive in the Equation. Increase in taxation reduces individuals' disposable income. This causes a reduction in consumption and, consequently, in imports. On the other hand, since Iran's exports level the main part of which consists of oil and gas exports is more dependent on global economy than domestic economic status and increase in taxation does not change exports rate significantly.
The changes, at last, increase foreign savings. A unit of increase in total taxation enhances foreign savings up to 5.44 units. Increase of domestic production is accompanied by decreased import of consumer goods and elevated import of intermediate goods (this leads to an increase in exports). Having imports of consumer goods and intermediate goods regressed on domestic production it is observed that changes of intermediate goods have a greater impact on domestic production than consumer goods. Still, since exports in increased more than imports, the coefficient of per capita GDP is positive in this equation. A unit of increase in per capita GDP leads to 2.29 units of enhancement in foreign savings. It is assumed that inflation increase reduces country's relative advantage. As a result, exports decreases and imports increases and this leads to a reduction in foreign savings. Results of the estimated model indicate that a unit of increase in inflation decreases foreign savings up to 0.021 units (consistent with the proposed assumption).

Virtual variables of oil price shock and Iran's Islamic Revolution are positive and statistically significant since oil price shock in early 1970s and increase in exports revenues foreign savings enhanced. Moreover, Islamic Revolution of 1978 led to an increase in foreign savings since people were encouraged to reduce consumption, especially consumption of foreign goods. Iran's war with Iraq is also positive but statistically insignificant. Virtual variable of international sanctions has a negative, significant effect on foreign saving. The reason is increased and intensified sanctions harm Iran's supply section since the section is highly dependent on foreign countries and exports is reduced following decreased production. Furthermore, because of surplus demand as a result of reduced production inflation is elevated. As a consequence, domestic goods become more expensive than foreign ones and country's export advantage is lost which leads to exports reduction or dormancy. Moreover, import of final and consumer goods increases because of production weakness. Altogether, these effects decrease foreign savings rate.

Based on estimations, 69% of the dependent variable's behavior is explained by explanatory variables. This indicates good explanatory power. Results of Breusch – Pagan – Godfrey heteroscedasticity test suggest lack of heteroscedasticity. In economic terms, this means that changes of each explanatory variable (total taxation, per capita GDP and inflation) in different observations have no effects on variance or dispersal of the dependent variable (foreign savings). Therefore, dispersal of error sentences is not affected and estimators are of sufficient efficiency. Durbin – Watson statistic (2.24) indicates lack of auto-correlation in estimations. Besides, the issue was investigated using Bruesch – Pagan method. Results confirmed Durbon – Watson statistic results and this means that there is no auto-correlation between disruption terms. Results of Ramsey test indicate model stability and suggest that model's functional form is selected and used accurately. Here, we report results of stability test of estimated regression parameters. CUSUM test's null hypothesis assumes all parameters are stable. Since the line is located in confidence distance based on the following chart and in significance level of 5% (including + and – and two standard errors), it can be concluded that the null hypothesis (stable parameters) is accepted.
6. RESULTS AND POLICY SUGGESTIONS

As mentioned earlier in the Introduction section, taxation is the most common and important way of financing government expenditures. The present paper investigated the effect of international sanctions on the effectiveness of taxation on foreign savings. For this sake, time series data of a 40-year period (1973 – 2012) and OLS method were used. In addition, two variables (per capita GDP and inflation rate) were used as explanatory variables. Virtual variables were employed to show the effect of international sanctions. Results indicate that severe international sanctions lead to an increase in inflation as a result of which produced goods become more expensive and export capacity reduces. On the other hand, import rate of consumer goods increases because of reduced production and enhanced demand for such goods. This finally decreases foreign savings. If such sanctions are not imposed on Iran, increased taxation resulting from reductions in disposable income leads to a decline in demand for goods and services and, consequently, in imports rate. Furthermore, since in normal status Iran's oil export income is a function of global demand and domestic status has no effect on it, exports rate remains constant and foreign savings totally enhance because of the decline in imports. The circumstances may provide infrastructural and financial bases to improve domestic production and higher employment rate beside higher economic growth level and more foreign savings. Therefore, based on results and respecting the negative effect of sanctions on Iran's economy it is suggested to improve international relations to seek economic independence from oil revenues and rely more on tax revenues and remove supply problems to obtain a self-relied economy and decrease the chance of being affected by international sanctions.
REFERENCES:


The Effects of Economic Sanctions on Target Countries over Time through Mathematical Models and Decision Making

Emad Rabiei *, Peyman Ahmadian

ABSTRACT: This study investigates the impact of economic and political sanctions on Governments over time. The objective of this paper is to determine the best strategy toward sanction through decision making methods. Some economists argue that it takes time to convince the sanction target. Others stress that economic adjustment will reduce incentives to comply. When it comes to international economic sanctions, the most frequent goal is regime change and democratization. Yet, past experiences suggest that such sanctions are often ineffective; moreover, quite paradoxically, targeted regimes tend to respond with policies that amplify the sanctions' harmful effects. These governments try to contain potential problems caused by sanctions by using three types of political rhetoric: appeasement, backlash, and surveillance. Negative sanctions cause the regime to use appeasement strategies (or calls for reforms and internal changes). It tends to use backlash rhetoric (or blaming the sanctioning powers) in response to, interestingly, positive sanctions. This paper also offers a political-economy model by using mathematical formulas which provides an explanation for these observations. As a result, we conclude if government utilize its own economic opportunities, there is a big chance that sanctions fail.

KEYWORDS: sanctions, Economic sanctions, change behavior, adjustment, sanction effects.

12 B.Sc, Industrial Engineering, Faculty of Engineering, Islamic Azad University, Karaj Branch, Iran; Email: e.rabiei92@gmail.com

13 B.Sc, Industrial Engineering, Faculty of Engineering, Islamic Azad University, Karaj Branch, Iran; Email: peyman70106@yahoo.com
1. INTRODUCTION

Over the course of the 20th century, international economic sanctions have become an increasingly important foreign policy tool. Since the outbreak of World War I, there have been a total of 187 sanctions episodes, about 66 of which started after the collapse of the Soviet empire (Hufbauer et al., 2007). Economic sanctions usually combine restrictions on international trade and investment and are generally viewed as an instrument to induce specific changes in a target country. In practice, sanctioning states have indicated a variety of goals but the most frequent by far is to promote democratization by pushing autocratic (or even despotic) regimes out of power.

Statistics have shown that majority of those foreign policy sanctions that have been successfully implemented in the past, have taken longer than one year to succeed. If the intentions of the imposing countries and the perceptions of the target country are known with certainty, the sanctions should either work directly or never at all (Bergeijk, 1989). The history of economic sanction instrument illustrates both sanctions that work directly and sanctions that never seem to work. Another peculiarity of economic sanctions is that the implementation of a sanction today does not necessarily imply that this sanction will be implemented in the next period as well (Carter, 1998). Indeed, according to the Hufbauer et al, about one out of three ineffective economic sanction lasted one year or less (Fig.1.). As the target of the sanction did not change its behaviour, the reason for implementing the sanction in the first place continued in these cases. Evidently then, continuation of a sanction is uncertain. This is why any theory of economy sanctions should not start from a deterministic setting (Acemoglu, D., 2009). First, it has to deal with the stochastic outcome of situations in which economic sanctions have been applied. Second, it has to acknowledge the impact of expectations and probabilities in the decision process. And the third, you need to introduce adjustment when probabilities are exogenous.

Yet, despite their frequent use, our knowledge about how economic sanctions might foster regime change and democratization is very limited. There is a general notion that, as Mack and Khan (2000) put it, “the pain inflicted by sanctions on citizens of target states will cause them to pressure their government into making the changes demanded by the sanctioning body.” But very little analytical work has actually been devoted to the exact channels through which sanctions are supposed to promote democratization. As a result, our understanding of the factors determining the likelihood of success and failure is highly incomplete. It is the
purpose of the present paper to make some progress in this regard by building a political-economy model which reflects some basic features of a typical target country. A closer look at the history of economic sanctions aiming at regime change and democratization corroborates the view that a better understanding of their use and consequences is required (Acemoglu, D., Robinson, J.A., 2000). In particular, past experiences with such sanctions offer a number of observations that are puzzling. One of these observations is that targeted regimes hardly try to dampen the negative economic consequences; targeted regimes rather tend to respond by pursuing policies which severely compound the sanctions’ adverse effects on the economy (Acemoglu, D., Robinson, J.A., 2001).

2. LITERATURE REVIEW

Economic sanctions are common diplomatic tools for countries to achieve their political goals. Baldwin (1971, 1985) defines these tools as “statecraft”, and argues that both positive and negative sanctions are instruments to exercise “power” (1985, p. 9). Power, in this case, refers to ability to alter the behaviour of others. More specifically, Baldwin (1971) argues that power influences one’s decision-making process, and can be used to alter the behaviour of targeted countries/political entities. For this reason, this study defines economic statecraft, in accordance with Baldwin (1971), as the diplomatic tools used to change policy. Economic sanctions as a tool to alter the previous behaviour of the targeted regimes are largely two fold and include both negative and positive sanctions. According to Baldwin (1985), negative economic sanctions are imposed as forms of embargo, boycott, tariff sanctions, quotas, or license denial (p. 41). These diplomatic tools coerce the target by punishment. On the other hand, positive sanctions alter targeted behaviour by providing rewards. These include reductions of tariff, direct purchases, or trade subsidies.

Since negative sanctions punish the target by decreasing resources or restricting the opportunity for more resources, these types of sanctions fundamentally diminish the economic status of targets (Wood, 2008). However, Bueno de Mesquita et al. (2003) argues that autocratic countries survive longer than democratic countries, because dictators only need to appease a small number of political elites. For this reason, as Bolks and Al-Sowayel (2000) argue in their research on the duration of sanctions, autocratic countries that quickly make countermeasures to sanctions remain in power longer than democratic countries. Escribà-Folch and Wright (2010) also argue that the effectiveness of economic sanctions is dependent on the regime type, especially the capability of institutional or structural appeasement. If economic sanctions actually decrease the amount of resources that are essential for political leaders to mitigate potential dissenters, leaders will become more repressive. Personalistic regimes and monarchs are more sensitive to the loss of resources because they lack the institutions to appease dissenters.

The political-economy model we are proposing to look into these issues rests on three simple elements. First, consistent with the focus on regime change and democratization, we consider an autocratic target country, i.e., a country where the government has substantial leeway to implement its preferred policies but also to divert public resources for its own benefit. Second, the state plays an important role in the private sector of the economy: By providing public goods and services, the government can affect the productivity of private firms and hence the citizens' incomes. Third, challenging the regime in order to promote a transition to democracy comes at an economic cost (Aidt, T.S., Albornoz, F., 2011): During periods of power transitions the public sector is paralyzed so that the economy as a whole becomes less productive.

3. HYPOTHESIS

We argue that negative sanctions have a positive impact on all types of rhetoric, while positive sanctions have limited impacts. Negative sanctions decrease resources, so that citizens who are excluded from the government’s distribution will be dissatisfied with the regime. For this reason, a totalitarian regime tries to minimize dissent by adopting the appeasement rhetoric of economic development and better living standards. Moreover, since negative sanctions explicitly show an external enemy who is trying to sabotage the targeted regime’s policy, the totalitarian regime uses the rhetoric of backlash to politically unify supporters. This will decrease the dissatisfaction of citizens because negative sanctions are perceived as an attack on the citizens, as well as the political leader (Bearce, David H., Tirone, and Daniel C, 2010). Finally, since negative
sanctions increase the level of dissatisfaction in general because of economic hardship, a totalitarian regime uses the rhetoric of surveillance to minimize dissenters. This rhetoric of surveillance idolizes socialism and the political leaders, while emphasizing the education of political ideology. The first hypothesis exemplifies this assumption:

3.1. Hypothesis 1.

When there are negative sanctions, a totalitarian government increases the proportion of backlash, appeasement, and surveillance rhetoric used by the leadership in reaction (Friedrich, Carl J., Brzezinski, Zbigniew K, 1965). Positive sanctions affect the regime in various ways, especially in terms of economic distribution. For example, a totalitarian government can distribute the resources to political supporters, while it diminishes the amount to citizens or maintains previous levels of distribution. In this case, people will be dissatisfied with the difference of distribution. Since surveillance rhetoric focuses on ideological purity, loyalty, education, and unity under the direction of political leader, a targeted regime can use it to mitigate the discrepancies that result from the positive sanctions (Licht, 2009).

3.2. Hypothesis 2.

When there are positive sanctions, a totalitarian government increases the proportion of appeasement and surveillance rhetoric but not backlash rhetoric. As the second hypothesis denotes, it is expected that positive sanctions have positive connections to appeasement and surveillance rhetoric (Galtung, Johan 1967) However, it is expected that positive sanctions do not have connections with backlash rhetoric because there is no attacker to blame.

4. DISCUSSION

The model presented in the following sections offers an explanation for why countries chose to compound the sanctions-induced hardship. This is not to say, however, that there could not be alternative explanations for why regimes sometimes magnify the sanctions’ harmful effects. Alternatively, it could be that the sanctions-induced scarcity of vital import goods helps a regime extract enormous rents, so that the domestic economy becomes less important as an income source and gets neglected (Mueller, J., Mueller, K., 1999). Still, while all these alternative explanations may be relevant, it is not obvious how they would explain why a regime would actively diminish the productive potential of its economy.
5. THE MODEL

5.1. Agents, Preferences, and Economic Activity

We consider an infinite-horizon economy in discrete time. The society starts out with two different players, the ruling elite (E) and the citizenry (N). (Gentile, Emilio 2000) Both groups derive utility from consumption of a non-storable output good. Preferences are given by the intertemporal utility function.

\[ U_{i,t} = \sum_{s=0}^{\infty} \beta^{s} u(c_{i,t+s}) \]  

(1)

Where the instantaneous utility function, \( u(\cdot) \), is assumed to be logarithmic; \( c_{i,t} \) refers to consumption by player \( i \) in period \( t \); and \( \beta \) is \((0,1)\) denotes the discount factor. The good output is produced by the citizenry only. Specifically, the citizenry has access to a technology which generates a profit (i.e., output minus cost of inputs) of

\[ Y_t = A_t G_t \]  

(2)

Units of the output good the first factor in Eq. (2), the productivity parameter \( A_t \), is taken to reflect the “availability” of crucial foreign input factors. It also serves as the channel through which economic sanctions affect the domestic economy. More precisely, I assume that the imposition of trade sanctions increases the cost of foreign inputs and hence decreases their use which is mirrored in a lower profit. (Bull 1984) The second factor, \( G_t \), refers to the level of the public good provided by the government. It captures in a simple way that the state plays an important role in promoting economic activity by, for instance, maintaining infrastructure, upholding law and order, or enforcing private contracts. Note that \( G_t \) reflects the level of the public good at the time production takes place. As described below, this level may be lower than the one provided initially as a result of damages associated with political turmoil.

5.2. Policy Choices and the Supply of the Public Good

In every period \( t \), two policy variables have to be determined. First, there has to be a decision on the tax rate on the citizenry’s income. The tax rate is denoted by \( T_t \in [0,T_m] \), where \( T_m < 1 \) refers to the maximum rate. The second policy choice is the supply of the public good, \( X_t \in [0,X^m] \), where \( 0 < X < \infty \), The associated per-unit cost (in terms of the output good) is given by \( \Theta A_t \), where \( \Theta < 1 \). An intuitive way of looking at this cost is to suppose that it reflects the number of government officials employed to produce the public good (Wintrobe, R., 1990). From this perspective, the cost can be interpreted as the public wage bill which moves in lockstep with private sector incomes. The assumption of a maximum supply, on the other hand, implies in a straightforward manner that there are decreasing returns in the production of the public good. The relationship between public expenses and the level of the good public is illustrated in Fig. 1. As mentioned above, the level of the public good available to the citizenry, \( G_t \), deviates from the one initially supplied by the government, \( X_t \), in times of political turmoil. (Acemoglu 2005) More specifically, the relationship between \( X_t \) and \( G_t \) is given by

\[ G_t = \max \{ X_t - \eta_t, 0 \} \]  

(3)

Where \( \eta_t \in \{0,1\} \) is an indicator variable that takes on the value 1 if the elite exits the economy and \( \chi \) refers to the size of the associated reduction. The exit of the elite may be the result of a popular revolt or, alternatively, due to a voluntary decision to flee the country. This assuming that the people of the country suffer in times of political turmoil is obvious. Myriad examples suggest that – when protesters clash with the regime or the regime abandons power abruptly – roads are blocked and law and order collapses. It is further natural to assume that, as implied by Eq. (3), the relative size of the reduction is larger if the supply of the public good is lower. An underdeveloped traffic infrastructure, for instance, means that one blocked road may be sufficient to cause gridlock. Regarding the magnitude of \( \chi \):

\[ \beta X_m < \chi < X^m \]  

(4)
Finally, as to the relationship between the social benefit and cost of the public good, it is clear that $X_t = X_m$ maximizes the social surplus as the marginal cost of providing the public good, $\epsilon A_t$, is only a fraction $\epsilon$ of the marginal impact on the aggregate output, $A_t$. The elite are not interested in the social surplus but in the government budget surplus (which it can appropriate when in power). The marginal impact of $X_t$ on the budget surplus is $(\tau_t - \phi)A_t$, where $\tau_t \in [0, \tau_m]$. In this regard, the formula was calculated as follows:

$$T_m > \phi$$

(5)

5.3. Political Regimes and the Transition of Political Power

There are two political regimes, dictatorship (R) and democracy (D), and the political state is denoted by $S_t \in \{R, D\}$. Under dictatorship, the state apparatus is captured by the elite, which means that the elite determines economic policies and is free to appropriate any fraction of the government budget surplus. Democracy, on the other hand, means that policies are determined by the citizenry, the economy starts as a dictatorship ($S_0 = R$). However, as long as $S_t = R$, the elite's power is continuously threatened as the citizenry may revolt in any single period. The citizenry's decision in this regard is denoted by $\rho_t \in \{0, 1\}$, with 1 indicating a revolt. If the citizenry decides to revolt, democracy will be irreversibly established in the next period (i.e., $S_t + 1 = S_{t+1} = D$). Moreover, in this case, the elite is immediately ousted. The result of such a forced exit is that the elite definitively loses all sources of income so that $U_{E,t} \rightarrow -\infty$. A revolt is not the only road to democracy; however, as the elite may seize an opportunity to voluntarily leave the country for exile abroad. Yet, because political circumstances in potential host countries may be in flux, the existence of such an opportunity is not assured but only emerges with an exogenous probability $p \in [0, 1]$ in each period. The state variable in this regard is denoted by $F_t \in \{0, 1\}$, with 1 meaning existence. If the elite seizes an existing opportunity, which is indicated by $\sigma_t = 1$, where $\sigma_t \in \{0, 1\}$, democracy will be again established irreversibly in the following period. Moreover, as of the current period, the elite's recurrent income is given by $\omega > 0$ so that $U_{E,t} = \ln(\omega)(1-\beta)^{-1}$. If the elite prefers to stay, though, the political state remains unchanged (i.e., $S_t = S_{t+1} = R$). Finally, note that the “exit” variable introduced above is defined by $\eta_t = \max \{\rho_t, \sigma_t\}$.
6. EXOGENOUS A PRIORI PROBABILITIES

Since we study the response of a target country to sanctions over time in previous parts, we have to discount (expected) future outcomes (or yields) that are the possible result of present decisions. The present discounted value of complying PDV(C) consists of the discounted future stream of normal pay offs yN, which at the rate time preference p yields (0<p<1):

\[ PDV(c) = \sum_{j=0}^{\infty} \rho^j y_N = \frac{y_N}{1 - \rho} \]  

(6)

Given the subjective a priori probability π that a sanction will be imposed, the net expected Value of not complying in period 0 is:

\[ (1 - \pi)(y_F + S) + \pi (y_F - E - D) \]  

(7)

We describe the development of damage over time in this model. Calculating the expected present discounted value of not complying PDV (NC) requires that we take both the sanction damage and the speed of adjustment into account. After t periods of adjustment, the gains from specialization have reduced to \(tS\) and the transitory damage to \(tD\). The discounted expected yield at \(t_0\) of not complying is therefore:

\[ \rho^t(1 - \pi)(y_F + \delta^tS) + \pi (y_F - E - \delta^tD) \]  

(8)

So provided \(\pi D \geq (1 - \pi)S\) (otherwise there is no expected gain in adjusting the economy), we may write:

\[ PDV(NC) = \frac{y_F - \pi E - \pi D - (1 - \pi)S}{1 - \rho^t} \]  

(9)

The target will decide to comply if the present discounted value of compliance is larger than or equal with the present discounted value of non-compliance: \(PDV (C) \geq PDV (NC)\). Let for notational convenience \(\eta \equiv (1 - p)/(1 - p,1)\) be the appropriate discount rate for adjustment items (D and S) in order to rewrite the condition for compliance as:

\[ \pi(\eta D + E) \geq (y_F - y_N) + (1 - \pi) \eta S \]  

(10)

So the expected temporary damage and the forgone gains of exchange must be larger than or equal to the sum of the premium of non-compliance \((y_F - y_N)\) and the expected gains from international specialization. So premium of non-compliance has to be balanced against the expected disutility of the sanction, taking adjustment into account. This requires that sanction damage is weighted by the subjective probability that a sanction will be actually implemented in the next period and that the transitory components are corrected for the speed of adjustment and the rate of time preference, respectively, as these terms are changing over time. The condition of equation (10) which describes the case of exogenous subjective probabilities is more likely to hold (and therefore the target is more likely to comply) if, other things equal, the premium of non-compliance decreases (either by a decrease of \(y_F\) or an increase of \(y_N\)), the rate of time preference increases (\(p\) decreases), the speed of adjustment decreases (\(\delta\) increases), or sanction damage (D, E, and/or S) increases.

Although being instructive, this model in this section is unable to explain why economic sanctions take some time to work.
7. ANALYSIS

7.1. Equilibrium under Democracy

Suppose that St=D so that productivity is at its maximum level (At=1) and the elite is no longer part of the game. Under these circumstances, the budget constraint of the public sector is given by \( \tau X_t \geq \phi X_t \). It is clear that this constraint must hold with equality: Imposing a tax rate higher than necessary to finance the public good is suboptimal. Therefore, in any single period, the citizenry prefers \( \tau = \phi \), which is also feasible because of restriction (10). The current level of consumption by the citizenry is thus given by:

\[
c_{N;=}=(1 - \phi)X_t
\]

(11)

It is further obvious that maximizing the above expression requires \( X_t = X_m \) so that \( \Pi_t = (\phi, X_m) \). Finally, since switching back to dictatorship is impossible, identical policies will be implemented in all future periods \( t+1, t+2, \ldots \). As a result, once the political state has switched to D, the uniform level of lifetime utility incurred by the citizenry is:

\[
V(D)=\frac{\ln((1-\phi)X_m)}{1-\beta}
\]

(12)

Note that \( V(D) \) is the highest lifetime utility the citizenry can achieve because, in each period, it consumes the full social surplus (which, in turn, is at its maximum level). (Marshall 2008) So, as will become clear below, the end of sanctions is not the only benefit of a switch to democracy. Democratization also means that the citizenry is freed from rent-extracting elite that imposes high taxes and invests too little in public goods.

8. A MODIFIED SETUP

The modified setup rests on the obvious idea that the level of the elite’s income in exile, \( \omega \), is not exactly known when the sanctions episode starts; it is only disclosed over time as exile opportunities emerge (Oechslin, 2014). To mirror this idea in a simple way, assume that \( \omega \) can take on two possible values, \( \omega^l \) and \( \omega^h \), where \( \omega^l < \omega^h \) and \( 0 < q = Pr[\omega = \omega^h] < 1 \). While all actors are informed about the distribution of \( \omega \) right from the beginning, they learn the actual realization of \( \omega \) only with the emergence of the first exile opportunity. Suppose further that the “toughness” of sanctions is limited (Oechslin, M. 2010). Specifically, the sanctioning body is unable to push \( A \) below a certain lower bound, denoted by \( A \), where \( A \) satisfies

\[
\omega^l = (T_m - \phi)A < (T_m - \phi)A X_m \leq \omega^h
\]

(13)

Restriction (13) implies that the maximum sanctions intensity is insufficient to push the elite’s equilibrium income below the lower of the two possible exile incomes, \( \omega^l \); on the other hand, the maximum sanctions intensity is sufficient to keep the elite’s equilibrium income below the higher of the two possible values, \( \omega^h \). No other modifications are introduced. In this modified setup, the nature of the dictatorship equilibrium changes upon the revelation of the elite’s exile income, \( \omega \in \{ \omega^l, \omega^h \} \).

8.1. Dictatorship Equilibrium after the Disclosure of \( \Omega \)

Suppose first that \( \omega = \omega^l \). Then, Eq. (13) implies that the sanctioning body is unable to induce the destabilized-dictatorship regime described in pervious parts. Moreover, as discussed before there is no stable-dictatorship equilibrium that involves the use of sanctions. Hence, the only equilibrium is stable dictatorship equilibrium with \( A_t = 1 \) for all \( t \) so that the citizenry’s value function is given by:

\[
V(R|\omega=\omega^l)=\frac{\ln((1-T_m)X_m)}{1-\beta}
\]

(14)
9. FINDING

The present analysis offers a coherent perspective on past experiences with sanctions imposed to promote regime change and democratization. On one hand, it suggests an explanation for why targeted regimes – far from trying to mitigate the consequences for the general population – respond by taking measures which severely amplify the sanctions' negative effects on the economy. On the other hand, the model is able to match a pattern that has been many times observed, namely that sanctions are kept in place for a number of years but eventually abandoned although the desired result has not been achieved. In general long-lived sanctions can only have some positive utility if (i) the target is very stubborn, dull or disbelieving and (ii) permanent sanction damage is sufficiently large. Otherwise sanctions should only be implemented for a limited number of years.

10. SUMMARY AND CONCLUSION

This paper develops a political-economy model to study the use and impact of international economic sanctions aiming at regime change and democratization. The model suggests that, when countries were threatened by such sanctions, a dictatorial regime may use the supply of public goods and services as a tool of defense. The intuition is straightforward. The 1st hypothesis declares that imposition of negative sanctions make the target act with harmful behaviors; however, the 2nd one suggests that positive sanctions cause benefits for both sides. As intended, the imposition of sanctions makes a previously reluctant citizenry more inclined to revolt. Thus, to prevent an immediate ouster, the elite has to increase the cost of a revolt and it can do so by reducing the supply of public goods. A lower supply means lower incomes for the citizenry and hence more strain (i.e., a steeper fall in utility) associated with a revolt's destructive effects. We model the decision by the sanction target to comply or to persist as an economic function adjustment. Our model distinguishes between sanction that (i) work directly, (ii) take some time to work and (iii) will never work. Delivering permanent damage increases the probability that the target will comply to learn from the sender's determinedness. Obviously, the adjustment effect is more likely to exceed the learning effect so that compliance becomes less likely if the sanctions are announced some periods before they are implemented. It has shown through models that sanctions especially economic sanctions need some time to influence the target regimes. And the target need some time to realize that the economic sanction threat is real.

11. PRACTICAL SUGGESTION

As mentioned above, although previous scholars suggest shot-term reaction to political and economic sanctions, we use modelling like exogenous sanctions intensity to predict more real reaction to all kinds of sanctions. In addition, the advantage of our model could be its efficiency for this era in which can be used in target countries. However, some of the theories like Mack and Khan (2000) and Baldwin (1971, 1985) got some reputation by its creativity through imposing sanction; it is now become useless because of changing in components of sanctioning. This point need to be considered that all provided methods including ours are not perfect and need enough time at least one year to put its effects on sanctions. Two types of rhetoric (appeasement and backlash) are more the result of reactions to external sanctions, in which can cause popular uprising toward target country. As intended, the imposition of sanctions make a previously reluctant citizenry more inclined to revolt. Thus, to prevent a hasty response, we suggest the elite increases the cost of a revolt and it can do so by reducing the supply of public goods. A lower supply means lower incomes for the citizenry and hence more strain (i.e., a steeper fall in utility) associated with a revolt's destructive effects.
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The Impact Of Sanctions On Iran’s Oil And Natural Gas Exportation: Swot Analysis

Davood Behboudi\textsuperscript{14}, Hossein Panahi\textsuperscript{15}, Taghi Zamzam\textsuperscript{16}

\textbf{ABSTRACT}: Iran holds the world's fourth-largest proven oil reserves and the world's second-largest natural gas reserves. International sanctions are redefining the Iranian energy sector, and the lack of foreign investment and technology is affecting the sector profoundly. In 2012, Iran saw unprecedented drops in its oil exports as sanctions by the United States (U.S.) and European Union (EU) were tightened, targeting Iranian oil export revenues. Oil and gas revenues play a vital role in Iranian government’s performance. That is why we decided to have a glance on efficacies of recent sanctions on Iran’s oil and gas exportation. The purpose of this paper is to outline how the Western sanctions have affected Iran’s oil and gas sector. Our studies show that, international embargoes have negatively affected this sector. Of course, Iran is not reactive and strikes back. Furthermore, in this study, through Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, we concluded that some of the top priorities for Iran to thwart the impact of sanctions are: develop its Natural Gas fields, reduce unrefined oil sales and enhance its exportation of petroleum products, correct internal mismanagements, and also reduce its annual budget reliance on crude oil revenues by non-oil export development and using tax monies.

\textbf{KEYWORDS}: Sanction, Iran, U.S., EU, oil and gas sector, Hormuz Strait, SWOT.

\textsuperscript{14} Professor, Department of Economics, University of Tabriz, Iran, P.O. Box 5166616471, Tabriz, 29 Bahman bolv.; \textit{Email: dbehbudi@gmail.com}

\textsuperscript{15} Associate Professor, Department of Economics, University of Tabriz, Iran, P.O. Box 5166616471, Tabriz, 29 Bahman bolv.; \textit{Email: panahi@tabrizu.ac.ir}

\textsuperscript{16} Corresponding author: MA. Student of economics, Faculty of economics, Management and Business, University of Tabriz, Iran, P.O. Box 5614855378; \textit{Email: tzamzam.ar63@gmail.com}
1. INTRODUCTION

Being in the Middle East, Iran has a great capacity of natural sources. Middle East is a very strategic zone in the world for trading oil and gas. During the history, its countries for their abundant oil and gas sources have been targeted by world powers. Iran is in vicinity of Caspian Sea from the north, and Persian Gulf and also the Sea of Oman from the south that connect Iran to the high seas. Its strategic position in the Middle East and excellent capacity in oil and gas sector cause very important role for that in the region. Furthermore, Iranians’ incredible developments in science and technology during last decades have enhanced Western concerns to grab the reign of power by Iran, in the Middle East. Because of these, the USA and the European countries tend to halt Iran’s improvements, even compulsorily. Iran’s designation as a petroleum state can be understood in two important and interlinked senses. First, Iran is an oil producer and a participant in global energy markets. Second, Iran’s economy is heavily reliant on oil and gas as its primary source of foreign currency earnings as well as for implicit subsidies on both domestic energy consumption and industrial production. International sanctions have a direct impact on Iran in both of these realms (Yong and Hajihosseini, 2013). Iran holds the world’s fourth-largest\(^{17}\) proven oil reserves and the world’s second-largest natural gas reserves. International sanctions are redefining the Iranian energy sector, and the lack of foreign investment and technology is affecting the sector profoundly. Iran, a member of the Organization of the Petroleum Exporting Countries (OPEC), ranks among the world’s top four holders of both proven oil and natural gas reserves. In 2012, Iran saw unprecedented drops in its oil exports as sanctions by the United States and European Union were tightened, targeting Iranian oil export revenues. The Strait of Hormuz, on the south-eastern coast of Iran, is an important route for oil exports from Iran and other Persian Gulf countries. At its narrowest point, the Strait of Hormuz is 21 miles wide, yet an estimated 17 million barrels per day flowed through it in 2011 (35 percent of all seaborne traded oil and 20 percent of oil traded worldwide). In addition to oil, liquefied natural gas (LNG) volumes also flow through the Strait. Qatar exports about 2 trillion cubic feet (Tcf) per year of LNG through the Strait, accounting for almost 20 percent of global LNG trade. Furthermore, Kuwait imports LNG volumes that travel northward through the Strait of Hormuz. These LNG flows totalled about 100 billion cubic feet in 2010 (eia, 2013). U.S. sanctions have been a major feature of U.S. Iran policy since Iran’s 1979 Islamic revolution, but U.N. and worldwide bilateral sanctions on Iran are a relatively recent (post-2006) development. Many of the U.S. sanctions reinforce U.N. and multilateral sanctions put in place in recent years by European and some Asian countries (Katzman, 2014). In 2011, EU member states of Iranian oil importers cut off their importation of Iran’s crude oil. After that, Iran’s customers were limited to some traditional ones like China, Japan, South Korea, India, Turkey, South Africa, and some others. Western embargoes even forced some of Iran’s traditional customers to reduce or cut off their importation of Iran’s crude oil. Some of those economies like Japan and South Korea cut off their importation of Iran’s crude oil. But some others like China as the world’s second largest crude oil consumer (after the USA) couldn’t give up Iran’s oil completely (in 2011, China was the largest buyer of Iran’s crude oil).\(^{18}\) So, trade with countries that still have normal relations with Iran, particularly China, Russia and India will still be a factor and will continue to be a source of foreign exchange earnings (Carstenius, 2013). The purpose of this paper is to outline how the Western sanctions have affected Iran’s oil and gas sector. Furthermore, in this study, through Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, we concluded that some of the top priorities for Iran to thwart the impact of sanctions are: develop its natural gas fields, reduce unrefined oil sales and enhance its exportation of petroleum products, correct internal mismanagements, and also reduce its annual budget reliance on crude oil revenues by non-oil export development and using tax monies. The next section outlines the literature review. The third section presents a general overview of sanctions. It discusses the nature of sanctions and also indicates a brief history of sanctions against the Islamic Republic of Iran. Section four illustrates the impact of sanctions on Iran’s oil and gas sector. Section five presents the SWOT model and four strategies of SWOT matrix for sanctions against Iran from the viewpoint of oil and

\(^{17}\) According to Kenneth Katzman’s report (2014), “Iran has 136.3 billion barrels of proven oil reserves, the third largest after Saudi Arabia and Canada.”

\(^{18}\) For more information see (eiu, 2012).
natural gas sector. Section six has been devoted to results. And finally, the last section concludes and presents some recommendations.

2. LITERATURE REVIEW

So far, because of the importance of sanctions issue, lots of studies have been done about their effects on aimed economies. In this brief we consider enough to some of those realms. The key evidence that sanctions can achieve ambitious foreign policy goals is the study by Gary Hufbauer, Jeffrey Schott, and Kimberly Ann Elliot (1985, 1990)—a reconsideration of the empirical record in the first large-N study of sanctions episodes—first published in 1985 and updated in 1990. Hufbauer, Schott, and Elliot (hereafter HSE) reviewed the universe of sanctions from 1914 to 1990, 115 identified cases in all. They reported sanctions success in 40 cases or 34 percent of the total.19 Elizabeth Rogers (1996) believes that, “economic sanctions are more effective than most analysts suggest. Their efficacy is underrated in part because unlike other foreign policy instruments sanctions have no natural advocate or constituency. As a result, their successes are widely unreported, while their failures are exaggerated by those with an interest in either avoiding their use, or in using other instruments” (Pape, 1997).

Robert Pape (1997), in his study challenges the emerging optimism about the effectiveness of economic sanctions. The decisive question he asks is whether economic sanctions are an effective tool for achieving international political goals, and if so, under what conditions. His aim is to assess the independent usefulness of sanctions. He concludes that economic sanctions have little independent usefulness for pursuit of noneconomic goals. He believes that, the HSE study is seriously flawed. Practically none of the claimed 40 successes of economic sanctions stands up to examination. Eighteen were actually settled by direct or indirect use of force; in 8 cases there is no evidence that the target made the demanded concessions; 6 do not qualify as instances of economic sanctions; and 3 are indeterminate. Of HSE’s 115 cases, only 5 are appropriately considered successes.

Habibi (2008), discussing about the efficacies of economic sanctions on Iran’s economy believes that, the economic mismanagement and institutional inefficiencies of the Iranian economy have made it more vulnerable to the economic sanctions that have been applied against Iran in recent years. The economist intelligence unit (eiu, 2012), in its report of Western sanctions on Iran asks this important question that: “is Iranian economy cracking under pressure?” Analyzing Iran’s economy under embargoes concludes that, the sanctions regime against Iran’s oil exports could become a prolonged affair, lasting throughout 2013, and is not guaranteed to lead to the result desired by Western policymakers. GAO (2013)-United States Government Accountability Office- has estimated the impact of sanctions on both of Iran’s crude oil production and its oil export revenues. In this estimation Iran has been compared with peer economies. According to the GAO’s analysis of data from the Energy Information Administration (eia) and International Monetary Fund (IMF), In contrast to its peers, Iran’s oil production and oil export revenues have fallen (for more information about GAO’s estimation see sector 4 of this paper).

3. GENERAL OVERVIEW

3.1. Why Sanction?

Sanctions are tools controlled by the UN Security Council to punish those states, which violate or threaten international peace and security, and restore international peace. Also, the governments impose sanctions to meet their national interests, accompany Security Council and penalize violators of international and human rights (Jorjani et al., 2013). The world’s major powers putting other countries under pressure tend to reduce their standard of living, income level, employments, and so on. So that, to fall down nation’s satisfaction of their states. And these can cause to change the strategy or even regime changes in sanctioned countries.

19 Hufbauer, Schott, and Elliot actually count 41 successes because they count U.S. sanctions against Egypt in 1963 as two successes even though the case is entered only once in the database (Pape, 1997).
The U.S. and its allies by their measures force Iran’s trading partners to choose either Iran or international financial system. In this situation, Iran’s trading partners have two options: a) cut off their transactions with Iranian companies and choose international financial system; b) give up the U.S. international markets and choose Iran (for more information see Gal and Minzili (2011)). Both of these two options have some pros and cons. In the first case, they’ll lose Iran’s high quality oil and have to find new markets for their energy needs. In the second case, they’ll lose the international trade system and also will face American sanctions on themselves. According to GAO’s report of State (2013), 20 countries reduced their volume of crude oil purchases from Iran after the passage of NDAA (National Defence Authorization Act for Fiscal Year 2012).

Furthermore, the Iran Sanctions Act (ISA) has been a key component of U.S. sanctions against Iran’s energy sector, and it has been expanded to sanction dealings with other Iranian economic sectors. ISA sought to thwart Iran’s opening of the sector to foreign investment in late 1995. ISA was the first major extra-territorial sanction on Iran — a sanction that authorizes U.S. penalties against third country firms. ISA’s application has been further expanded by several laws enacted since 2010 that amend its provisions. Several firms have been sanctioned under ISA for investing in Iran’s oil and gas fields (Katzman, 2014). The USA and EU by their measures aim some goals as: a) they tend to reduce foreign investment in Iran’s energy sector so that Iran can’t develop its oil and natural gas fields; b) they tend to make difficult Iran’s access to international financial system aimed at facing Iran a lot of problems in its payment mechanism with its trading partners; c) they also eliminated the insurance of Iranian shipments to make adversities for transferring of Iran’s petroleum and petrochemical cargoes. On the other side of the coin, response to the sanctions, Iran has had some strategic reactions. For instance: a) Iran decided to change its payment system and trading partners; b) Iran also used barter trade system; furthermore, c) Iran and some of its traditional trading partners used their own insurance for Iranian shipments.

3.2. A Brief History of Sanctions against Iran

During last decades, whenever Iran tended to be independent faced Western reaction on itself. The U.S. cruel measures against Iranian nation have always existed, however, in this brief we consider enough to some of them. The geopolitics of Iranian energy has been a source of tension between Iran and the West several times in the past. Oil was first discovered in Iran in 1908, and subsequently a concession to produce oil was awarded by the Shah of Iran to the Anglo-Persian Oil Company, which was renamed the Anglo-Iranian Oil Company (AIOC) in 1935 and British Petroleum (BP) in 1954. In the early 1950s the Iranian Prime Minister, Mohammed Mossadegh, attempted to nationalize the AIOC, but he was removed from power in 1953 following a two-year crisis. During this episode, the UK, in retaliation for the nationalization of AIOC, placed an embargo on Iranian oil exports and attempted to prevent Iran from selling oil elsewhere (eiu, 2012). On November 4, 1979, Iranian students took 100 people hostage in the U.S. embassy in Tehran, including 52 Americans. The Iranian government supported the students and demanded that the United States extradite the shah, who had fled to the United States on October 22 (Pape, 1997). In response, President Carter claimed these acts a “threat to our national security” resulting from U.S. reliance on Iran as a source of crude oil (Meshkat, 2013). Over the next several weeks, the United States imposed a series of trade and financial sanctions on Iran, including an embargo on oil (Pape, 1997). US sanctions were exacting a toll on the Iranian energy industry. Unilateral US sanctions have been in place since the 1990s, when a presidential executive order by the Clinton administration banned Iranian oil imports and prohibited US investment in Iran’s energy sector (eiu, 2012). Beginning in 2010, Congress has enacted additional financial sanctions which generally restrict Iranian access to the U.S. financial system. In addition, the United Nations and the European Union have adopted several sanctions to compel Iran to suspend its nuclear program (GAO, 2013).

A series of sanctions targeting the oil sector have resulted in cancellations of new projects by a number of foreign companies, while also affecting existing projects. Following the implementation of sanctions in late-

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20 For more information see (eiu, 2012).

2011 and mid-2012, Iranian production dropped dramatically. Although Iran had been subject to four earlier rounds of United Nations sanctions, the much tougher measures passed by the United States and the European Union have severely hampered Iran’s ability to export its oil, which directly affected its ability to produce petroleum and petroleum products (eia, 2013). Indeed, in 2012 Western sanctions on the Islamic Republic of Iran’s oil and gas industry, aimed at putting economic pressure on it to change its nuclear policy, have reached an unprecedented level. However, it is only recently that Iran’s oil and gas sector has been specifically targeted by both the US and the EU in such a coordinated manner. Importantly, this marks the first time since the foundation of the Islamic Republic of Iran that the EU member states have collectively put in place sanctions on the export of Iranian crude oil—until now an action that, with a few exceptions, had only been taken by the US (eiu, 2012).

4. SANCTIONS AND IRAN'S OIL AND GAS SECTOR

4.1. Oil Sector

With 25% of GDP, 85% of foreign currency income, and 65% of government revenues (Jorjani et al., 2013), the most important driver of Iranian economy is oil (Habibi, 2008). Iran has 34 producing fields (22 onshore and 12 offshore), with onshore fields comprising more than 71 percent of total reserves. According to Oil & Gas Journal, as of January 2013, Iran has an estimated 154 billion barrels of proven oil reserves, 9 percent of the world’s total reserves and over 12 percent of OPEC reserves. Over 50 percent of Iran’s onshore oil reserves are confined to five giant fields, the largest of which are the Marun field (22 billion barrels), Ahwaz (18 billion barrels), and Aghajari (17 billion barrels). Of those onshore reserves, more than 80 percent are located in the south western Khuzestan Basin near the Iraqi border. Currently, Iran’s largest producing field is the onshore Ahwaz-Asmari field, followed by the Marun and Gachsaran fields, all of which are located in Khuzestan province. Iran’s largest offshore field is Abuzar field, with a production capacity of 175 thousands bbl/d. According to FACTS Global Energy (FGE), Iran also possesses reserves in the Caspian Sea totalling approximately 100 million barrels (eia, 2013).

Western sanctions against Iran have negatively affected on both production and exportation of Iran’s crude oil. In 2013, GAO (United States Government Accountability Office) has estimated the impact of sanctions on both Iranian production and export revenues of crude oil. In this estimation Iran has been compared with peer economies. The peer group comprises Algeria, Angola, Armenia, Azerbaijan, Bahrain, Djibouti, Egypt, Equatorial Guinea, Gabon, Jordan, Kuwait, Mauritania, Morocco, Oman, Panama, Republic of Congo, Qatar, Saudi Arabia, Tunisia, Turkey, Turkmenistan, United Arab Emirates, and Venezuela (GAO, 2013). Table 1 indicates the type of peer countries.

<table>
<thead>
<tr>
<th>Peer country</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>Regional and oil exporting peer</td>
</tr>
<tr>
<td>Angola</td>
<td>Oil exporting peer</td>
</tr>
<tr>
<td>Armenia</td>
<td>Regional peer</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>Regional and oil exporting peer</td>
</tr>
<tr>
<td>Bahrain</td>
<td>Regional peer</td>
</tr>
<tr>
<td>Djibouti</td>
<td>Regional peer</td>
</tr>
<tr>
<td>Egypt</td>
<td>Regional peer</td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td>Oil exporting peer</td>
</tr>
<tr>
<td>Gabon</td>
<td>Oil exporting peer</td>
</tr>
<tr>
<td>Jordan</td>
<td>Regional peer</td>
</tr>
<tr>
<td>Kuwait</td>
<td>Regional and oil exporting peer</td>
</tr>
<tr>
<td>Mauritania</td>
<td>Regional peer</td>
</tr>
<tr>
<td>Morocco</td>
<td>Regional peer</td>
</tr>
<tr>
<td>Oman</td>
<td>Regional peer</td>
</tr>
<tr>
<td>Panama</td>
<td>Oil exporting peer</td>
</tr>
<tr>
<td>Qatar</td>
<td>Regional and oil exporting peer</td>
</tr>
<tr>
<td>Republic of Congo</td>
<td>Oil exporting peer</td>
</tr>
</tbody>
</table>
As mentioned, sanctions have been put in place to force Iran’s energy sector to decline its oil and gas production. However, Iran has done its best to control the negative impacts of sanctions, but naturally every restriction has some efficacies that no aimed state can control them completely. And obviously, these multilateral embargoes are being used by US, UN, EU, and their Asian allies against Iran have had some negative effects on Iran’s oil production. According to the GAO (2013) analysis of data from the Energy Information Administration, Iranian oil production sharply diverged from peer oil production beginning in 2011. Iranian oil production has fallen by more than 16 percent since July 2010, while production by peers concurrently increased by roughly 4 percent. Of course, concurrent events such as economic policies in Iran imply that factors in addition to sanctions may be affecting its economy (see Figure 1). Figure 1: Oil Production for Iran and Peers, January 2000 through June 2012

![Oil Production for Iran and Peers](source)

Note: The Oil Production Shown for Peers Is Based on the Combined Production of All Peers.

For oil exporting countries, the oil export revenues—due to price and quantity effects—are key to the overall economy (Kitous et al., 2013). Any reduction in Iran’s crude oil production will cause to decline its exportation capacity of crude oil. Naturally, that will cause to decline Iranian oil export revenue which plays a vital role in Iran’s annual budget. In other words, the U.S. and its allies by their measures on Iran’s energy sector aimed the most important section of Iranian economy. Indeed, they knew that Iranian state relies on oil revenues to procure its annual budget. For this reason, putting Iranian oil companies under pressure, Western countries tended to decline its oil exportation to face Iranian state budget deficit. Figure 2 illustrates oil export revenue for Iran and peers. The impact of sanctions on Iran’s oil export revenue, specially, in 2011 and 2012 is clear. Since 2011 sanctions have caused to decrease Iranian oil export revenue, while peer’s revenue has increased.
4.2. Natural Gas Sector

Unlike Iran’s oil sector, its natural gas exportation is small. The great deal of produced natural gas is being used in residential sector and also domestic oil fields to enhance their exportation capacity. Table 2 indicates Iranian production and consumption capacity of natural gas (2002–2012).

<table>
<thead>
<tr>
<th>Year</th>
<th>Production</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>75.0</td>
<td>79.2</td>
</tr>
<tr>
<td>2003</td>
<td>81.5</td>
<td>82.9</td>
</tr>
<tr>
<td>2004</td>
<td>84.9</td>
<td>86.5</td>
</tr>
<tr>
<td>2005</td>
<td>103.5</td>
<td>105.0</td>
</tr>
<tr>
<td>2006</td>
<td>108.6</td>
<td>108.7</td>
</tr>
<tr>
<td>2007</td>
<td>111.9</td>
<td>113.0</td>
</tr>
<tr>
<td>2008</td>
<td>116.3</td>
<td>119.3</td>
</tr>
<tr>
<td>2009</td>
<td>131.2</td>
<td>131.4</td>
</tr>
<tr>
<td>2010</td>
<td>146.2</td>
<td>144.6</td>
</tr>
<tr>
<td>2011</td>
<td>151.8</td>
<td>153.5</td>
</tr>
<tr>
<td>2012</td>
<td>160.5</td>
<td>156.1</td>
</tr>
</tbody>
</table>


As this table shows, huge part of Iranian natural gas production is being used in domestic consumption. For this reason, Iranian natural gas exports are small. At most of these years its domestic consumption has been more than its production but two years (2010 and 2012). Because of that, Iran has to have some imports to meet its domestic needs of natural gas. Iran exports natural gas to Turkey, Armenia, and Azerbaijan, and receives pipeline imports from Turkmenistan and Azerbaijan (eia, 2013). See table 3 for average Iranian imports and exports of natural gas in 2012.
Table 3: Average Iranian Imports and Exports of Natural Gas in 2012

<table>
<thead>
<tr>
<th>Imports</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armenia</td>
<td>44</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>35</td>
</tr>
<tr>
<td>Turkey</td>
<td>670</td>
</tr>
<tr>
<td>Turkmenistan</td>
<td>770</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>805</strong></td>
</tr>
</tbody>
</table>


Unit: Million Cubic Feet per Day

According to Oil & Gas Journal, as of January 2013, Iran’s estimated proved natural gas reserves stood at 1,187 trillion cubic feet (Tcf), second only to Russia. Eighty percent of Iranian natural gas reserves are located in non-associated fields, and most of these reserves have not been developed. Iran’s natural gas reserves are located predominantly offshore, although significant associated natural gas production originates from the country’s onshore oil fields. The giant South Pars gas field, only a portion of which is in Iranian territory, comprises over 27 percent of Iran’s total proved natural gas reserves and is Iran’s largest natural gas field. South Pars’ proved natural gas reserves are estimated at 325 Tcf, according to FACTS Global Energy (FGE), with 3-4 billion barrels of condensate in place, as reported by Arab Oil and Gas Directory. Kish is Iran’s second-largest field, with an estimated 70 Tcf of reserves in place. Other large natural gas fields include North Pars, Tabnak, Forouz, Kangan, and Ferdowsi (eia, 2013). Demand for natural gas in Asia has grown steadily during the past decade and is expected to increase considerably in the next 20 years. With one of the world’s largest reserves of natural gas and an enviable geographical location as a likely hub for energy transit, Iran is in an excellent strategic position to benefit economically and politically from this growth in demand (Carter, 2014). Although exploration for new resources is not a priority for the Iranian government, a number of new finds have been announced recently. In 2011, four sizeable new discoveries were announced: Khayyam, Forouz B, Madar, and Sardare Jangal fields. Iran is the third-largest natural gas producer in the world due in part to the development of the giant South Pars field. Despite repeated delays in field development and the effects of sanctions, Iran’s natural gas production is expected to increase in the coming years (eia, 2013).

There are two basic conditions for Iran to become a major gas exporter: first, Iran would need to create a sufficient gas surplus for export by reducing domestic consumption and/or increasing her marketable production. Second, the government would need to reach agreements—i.e. conclude contracts—with foreign customers (Jalilvand, 2013). Much like in the oil sector, the natural gas sector has been hampered by international sanctions. Although sanctions targeting the Iranian natural gas exports were only recently enacted by the EU, lack of foreign investment and sufficient financing has resulted in slow growth in Iran’s natural gas production. According to some analysts, Iran should have become one of the world’s leading natural gas producers and exporters given its large resource base. Development of its fields has been hampered by a combination of financing, technical, and contractual issues. Nonetheless, Iran’s natural gas production has grown and likely will continue to increase in coming years. FGE (FACTS Global Energy) estimates that Iran’s gross natural gas production will increase to 10.9 Tcf in 2020, but that growth will depend on the pace of development of the South Pars field (eia, 2013).

5. MODEL

5.1. SWOT Analysis

SWOT analysis (Weihrich, 1982), a strategic planning method for business management, was made by Professor Weihrich at the University of San Francisco and had been successfully applied in the analyses of business or industry on the advantages and weaknesses of internal environment, and the opportunities and

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22 Development of the offshore South Pars field is of vital importance to Iran, both politically and economically. Natural gas production from South Pars is critical to meet increasing domestic consumption and to meet Iran’s current and future export obligations (eia, 2013).
threats of external environment. SWOT analysis can help managers clearly understand the business advantages and disadvantages of an enterprise itself, meanwhile, systematically analyze the opportunities of the external environment and threats from competitors, such that they can make decisions quickly (Lu et al., 2013). This paper tends to analyze the strengths (S), the weaknesses (W), the opportunities (O), and the threats (T) for impact of sanctions against Iran from the viewpoint of oil and natural gas sector (see Table 4).

**Table 4: SWOT Analysis for Impact of Sanctions on Iran’s Oil and Gas Sector**

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great deal of oil and natural gas reserves</td>
<td>Undeveloped natural gas fields</td>
</tr>
<tr>
<td>High quality oil</td>
<td>Old oil fields</td>
</tr>
<tr>
<td>Authority on Hormuz Strait</td>
<td>Sale of unrefined oil</td>
</tr>
<tr>
<td>Membership in OPEC</td>
<td>Heavy reliance on crude oil revenues</td>
</tr>
<tr>
<td>Connection to the high seas</td>
<td>Internal economic mismanagements</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>A chance to develop natural gas fields because of the increasing global needs for natural gas</td>
<td>Change into an isolated economy</td>
</tr>
<tr>
<td>A chance to develop natural gas fields because of the restrictions on oil sector</td>
<td>Diminish of foreign investment in oil and natural gas sector</td>
</tr>
<tr>
<td>A chance to self-sufficiency in oil and natural gas sector</td>
<td>Less access to international markets</td>
</tr>
<tr>
<td>A chance to decline reliance on crude oil revenues</td>
<td>Payment mechanism difficulties</td>
</tr>
<tr>
<td>A chance to reduce unrefined oil sales</td>
<td>Shipment insurance problems</td>
</tr>
<tr>
<td>A chance to non-oil export development</td>
<td>Decline oil production, exportation, and revenues</td>
</tr>
<tr>
<td></td>
<td>Face budget deficit</td>
</tr>
</tbody>
</table>

See also SWOT matrix and its four strategies (SO, ST, WO, and WT) in table 5.

**Table 5: SWOT Matrix Strategies Table**

<table>
<thead>
<tr>
<th>SWOT matrix</th>
<th>Internal analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strengths (S)</td>
</tr>
<tr>
<td>External analysis Opportunities (O)</td>
<td>SO strategy (Max-Max)</td>
</tr>
<tr>
<td>Threats (T)</td>
<td>ST strategy (Max-Min)</td>
</tr>
</tbody>
</table>


In SWOT matrix, SO, ST, WO, and WT strategies are defined as (Lu et al., 2013):

a) SO strategies, that is, in accordance with the principles of maximizing both of the strengths and opportunities (Max–Max), enhance the merits and take advantage of chances.

b) ST strategies, that is, in accordance with the principles of maximizing the strengths and minimizing the threats (Max–Min), strengthen the advantages and avoid the risks.

c) WO strategies, that is, in accordance with the principles of minimizing the disadvantages and maximizing the opportunities (Min-Max), reduce the weaknesses and utilize the chances.
d) WT strategies, namely, in accordance with the principles of minimizing both of threats and disadvantages (Min–Min), decrease threats and overcome shortcomings.

These four strategies for impact of sanctions on Iran’s oil and natural gas sector have been summarized in table 6.

Table 6: SWOT Matrix Strategies for Impact of Sanctions on Iran’s Oil and Gas Sector

<table>
<thead>
<tr>
<th>SO strategies</th>
<th>WO strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Huge reserves of natural gas, boycotted oil sector, and also increasing global needs for natural gas (specially, in Asian countries) procure an excellent opportunity for Iran to develop its natural gas fields. Hence, Iran should maximize both strengths and opportunities mentioned in table 4 for reducing impact of sanctions.</td>
<td>Western sanctions with their all disadvantages on Iran’s economy, industry, and policy, have provided some opportunities for Iran. For example, a chance to reduce reliance on crude oil revenues, a chance to non-oil export development, and also a chance to reduce unrefined oil sales. So, Iran by minimizing its internal weaknesses should utilize of those opportunities appropriately.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ST strategies</th>
<th>WT strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diminish of foreign investment in energy sector, less access to international financial system, payment mechanism difficulties, and shipments insurance problems, all are options that can change Iran as an isolated country. But Iran can reduce these kinds of threats by reinforcing strengths (indicated in table 4). For instance, by blocking Hormuz Strait can prevent of oil transferring and affect international oil markets.</td>
<td>As mentioned in ST strategies, isolation of Iran is one of the most important aims of sanctions. For reducing this threat, Iran should reduce its internal weaknesses (indicated in table 4). As an example, improvement of economic mismanagement will thwart some of sanctions’ disadvantages.</td>
</tr>
</tbody>
</table>

6. RESULTS

On the basis of Iran’s huge reserves of natural gas, boycotted oil sector, and also increasing global needs for natural gas (specially, in Asian countries), it is expected that Iran will develop its natural gas fields. Iran also, should reduce its annual budget reliance on crude oil revenues. Oil prices depend on external elements and every fluctuation in international markets can threat Iranian budget security. For this reason, Iranian state should diminish unrefined oil sales and enhance its exportation of petroleum products. Furthermore, Iranian state should develop its non-oil exports and use tax monies to support its annual budget.

7. CONCLUSION AND RECOMMENDATIONS

Sanctions with their all difficulties on aimed regimes provide some opportunities for them. The world’s experiences indicate that, pressures and severities on targeted nations in some cases have increased their self-sufficiency in economy, industry, and so on. Diminish of foreign investment in energy sector, less access to international financial system, payment mechanism difficulties, and shipments insurance problems, are only some results of Western sanctions against Iran. All of them are options that can change Iran as an isolated country. Nonetheless, Iran with its strategic location in the region not only can thwart some of these threats, but can change them to opportunities. Of course, firstly this needs to reform internal mismanagements. In this essay, we analyzed the SWOT matrix for sanctions against Iran and their effects on Iran’s oil and natural gas sector. So far, Because of the importance of sanctions issue, lots of studies have been done about their effects on aimed economies. But inasmuch as the authors know, so far, there is no coherent study about Western embargoes and their efficacies on Iranian oil and gas sector, using SWOT approach. We believe
that, SWOT matrix and its four strategies can help to decision makers of sanctioned countries for making right decisions to contrast world powers’ tyrannical measures.

Our studies show that, Iran needs to use a combination of maximized strengths and opportunities and minimized weaknesses and threats. These strategies and their combinations were mentioned in tables 4, 5, and 6. But as a consequence of them, we present some recommendations as follow:

1) As mentioned, because of the global increasing needs to energy (natural gas, in particular), Iran should improve its natural gas fields. Specially, the production capacity of the giant South Pars gas field.

2) Because of the Russia’s cold climate specially in winter, they can’t produce fruit, green, and also corny products. Furthermore, Western recent sanctions against Russia, have enhanced its needs to these kinds of products. Clearly, it has provided a great opportunity for Iran to non-oil export development.

3) The Strait of Hormuz is a vital checkpoint to energy transit in the Middle East and even in the world. Iran’s authority on Strait is a desirable opportunity for Iranians. For example, by blocking Hormuz Strait Iran can prevent of energy transferring and affect the international energy markets.

4) Iran as a member of OPEC has an effective role in the international energy markets. Any reduction in Iran’s production of crude oil can negatively affect the international supply of crude oil and its price. So, Iran should use of this opportunity to reduce its energy market’s vulnerability.

5) Considerable quality of Iranian crude oil is another opportunity which Iranian state should concentrate on it. Sanctions not only negatively affected Iranian economy, but they had some negative aspects on Western economies. As an example, losing Iranian oil markets, Western companies had to find a new market for their energy needs. But not all countries have high quality oil like Iran’s. So, Iranian companies to exploit of this advantage should reconstruct their old oil fields so that improve their oil quality more than before.

At the end it is important to note that, Iran has done its best to control the negative impacts of sanctions, however, naturally every restriction has some efficacies that no aimed state can control them completely. And Iran is not as exception in this issue.
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Forecasting Change Of Iran's Trading Partners With An Emphasis On Continuing Sanctions In Horizon Of Fifth Iranian Development Plan

Mehdi Bastani\(^{23}\) and Ebrahim Ensan\(^{24}\)

**Abstract:** Expanding non-oil exports for diversifying export earnings is a common policy in developing countries with monoculture economics. However, in recent years, sanctions as the major obstacle of achieving the objectives lead to change of trading partners through affecting domestic and foreign policies. Therefore, the uncertainty of future trading partners due to the uncertain conditions of sanction highlights the necessity of forecasting the change trends of Iran's trading partners. This paper aimed to review and forecast share changing of Iran's major trading partners from 1996 until the end of the fifth development plans. Thus, first, the share of trading partners from agricultural export products as the part of non-oil exports during 1996-2012 was investigated using the data on non-oil exports of Iran Customs Administration. Then, the share of Iran's trading partners was forecasted during 2013-2015 by considering sanctions and using econometric techniques. Results of the forecasts showed that, in the non-sanction conditions, the share of western countries of Iran's non-oil exports would increase and, with continuing sanctions, exports would be limited to the neighbouring countries.

**Keywords:** Forecasting, Trading Partners, Non-oil Exports, Iran's Fifth Development Plan.

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\(^{23}\) M.S. of Agriculture Economics, Department of Agricultural Economics and Developments, Tehran University, Daneshkadeh St, Karaj, Alborz, Iran, P.O. Box 4111; FAX (0098) 26-12220886; E-mail: Mahdi_bastani@ut.ac.ir

\(^{24}\) M.S. of Agriculture Economics, Department of Agricultural Economics and Developments, Tehran University, P.O. Box 4111; FAX (0098) 26-12220886, E-mail: ebrahim_ensan@ut.ac.ir
1. INTRODUCTION

The role and importance of export development, especially non-oil exports, have been completely accepted in the process of economic development so that export development provides exchange resources for economic development and could have a decisive role in creating economic infrastructures, allocating optimal resources, using economies of scale, and achieving international specialization (Salvatore, 2008). Although the situation of non-oil exports in Iran has been at a lower level than the expected state during the first, second, and third economic development plans in Iran, in the fourth development plan, the non-oil exports turned to an effective and key element in economic development. In addition, preparation of social and cultural infrastructures for applying export strategies has been emphasized. In this period, the operation of non-oil exports indicated the success of the adopted policies so that about 92% of desired goals were achieved in the third development plan and this number almost reached 149% for the fourth development plan. In other words, the target that was considered for non-oil exports in the fourth plan was $ 52.9 billion; but, the performance during this plan was more than $ 79 billion. This situation seems to indicate that exports in development conditions have been rising and the governmental policies have had a positive impact on the trend of exports. Thus, Iran's non-oil exports are expected reach $ 300 billion until the end of the fifth development plan (2015) (Abbaschian and Zirak, 2012). Also, in order to achieve the desirable level of development, in addition to using internal resources and capabilities, it is necessary to establish more effective economic and trade relations with other countries. While managing economic and trade relations for achieving export development, countries have to do proceedings such as (Rahmani and Abedin Moghanaky, 2008):

• Detecting and identifying export potentials and import requirements consistent with development plans,
• Identifying and measuring relative advantages and planning to maintain and develop these advantages,
• Prioritizing export-oriented industries and economic activities for the optimal allocation of scarce resources,
• Identifying the target market of exports based on the comparative advantages of the country, and
• Finally, identifying and determining trading partners based on the needs of import and export markets.

Each of these actions has had a vital role in the success of trading strategies, particularly export development strategies and appropriate practical studies are needed. Also, ignorance of trading partners and priorities of each country in establishing trade relations are the most important issues in the trade policies that should be considered (Fathi and Pakdaman, 2010). In order to establish and maintain trade relations between Iran and other countries, it is necessary to note and thoroughly analyse Iran's foreign trade. One of the aspects that could be influential in the development of the trade fields between Iran and its partners and lead to the extension of Iran's presence in export markets, particularly in non-oil exports, is determining the possibility of expanding trade with trading partners. Accordingly, this study intended to survey the share of five major trading partners of Iran in agricultural products as a part of non-oil products during 1996-2012 and forecast their shares during 2013-2015 (end of the fifth development plan) by considering the severity of sanctions in recent year. Results of this forecast can be an instrument for guiding foreign policymaking. The present study attempted to answer the following question: What will change the share of Iran's selected trading partners in future, if these sanctions will continue? Indeed, the purpose of this study was to forecast the share of Iran's trading partners in the horizon of the fifth development plan (2015). In this regard, it was assumed that the sanctions can be effective in the share of Iran's trading partners so that, by continuing international sanctions against Iran, Iraq would remain the largest trading partner of Iran.
2. LITERATURE REVIEW

So far, there have been no studies in the field of forecasting domestic and foreign trading partners. The present work was the first study that investigated and forecasted the share of Iran's major trading partners for the first time. However, several studies have been done on the predictive techniques that were used in this study. Among the conventional forecasting methods, time series, ARIMA procedure, and its classes have had wider application. In an article entitled "Modelling and forecasting the value of imports in Malaysia", Mohamed et al. (2014) considered variables such as exchange rate, tariff, sales tax, producer price index, and values of exports and imports in previous years and used the ARIMAX method to forecast future values of imports in Malaysia. In another study, Ranjit Kumar et al. (2013) applied SARIMA method to model and forecast monthly meat exports from India. Then, desired forecasting was evaluated by calculating root mean square prediction error (RMSPE), mean absolute prediction error (RMSPE), and relative mean absolute prediction error (RMAPE). Maknickiene and Maknickas (2012) used various neural network techniques to forecast the financial market of Lithuania; among their used methods, Delfi method had higher compatibility and reliability than others. In his study, Wang (2011) forecasted the export of Taiwan using ARIMA method. Kargbo (2007) applied exponential smoothing, ARIMA, VAR, and Engle-Granger (EG), methods to predict the value of exports and imports of agricultural sector in South Africa. He concluded that the ARIMA method had less percentage of forecasting error than others. Moreover, Ghafoor and Hanif (2005) first investigated the past behavior of imports and exports in Pakistan during 1971-2003 and then used the ARIMA methods to forecast the trading patterns of Pakistan from 2004 to 2010. Gilanpour and Kohzadi (1997) used this process and, based on monthly data for the period of January 1975 to December 1989, predicted the Thai rice prices. In this study, the best model of ARIMA was chosen according to Akaike and Schwarz Bayesian criteria. Afterward, rice price was predicted and compared with the actual values in the months of January, February, and March 1990. The results showed that rice price was not static in the international market and the occurrence of any shocks in the market would follow long-term effects. Mojaverian and Amjadi (1999) forecasted the price of citrus using common methods of time series and trigonometric functions. The main objective of their paper was to compare the predictive power of these methods by considering the effects of seasonality. For this purpose, by using monthly data, simulation was made during 1982 to 1995. Finally, the predictive power of alternative models was compared for the year 1996 using mean squared error (MSE), mean absolute deviation (MAD), and mean absolute percentage error (MAPE). The results showed that the trigonometric functions were more efficient than the time series method in terms of predicting outside the sample.

Based on these studies, despite the existence of various methods in forecasting, experimental conditions cannot be generalized to actual occurrences for real-time expectation purposes.

3. THEORETICAL FOUNDATIONS

Forecasting is usually done based on the past behavior of the variable as non-parametric models of exponential smoothing and parametric models of time series. These models often forecast based on the past behavior of the variables. In general, in time series models, instead of stress on the theoretical basis for investigating the behavior of economic variables, it is believed that behavioral characteristics of variables must be inferred from their observations. Time series models are a set of models that consist of two general categories of univariate and multivariate models. Autoregressive integrated moving average (ARIMA) and autoregressive integrated moving average with X (ARIMAX) are the most important univariate models and autoregressive distributed lag models (ARDL), vector autoregressive (VAR), and vector error correction models (VECM) are in the group of multivariate models (Besler and Brandt, 1979).

In the univariate time series models, future behavior of the variable will be modeled based on its past behavior and it is assumed that, in order to forecast the behavior of the occasion variable, the data, except those of its series, are not needed. In these models, y variables are explained by the past values and error terms. In other words, the information contained in the probability distribution of a series \((y_1, \ldots, y_n)\) is the basis for inferring and forecasting events \(y_{n+1}\) (Nelson, 1973).
Multivariate time series models include a set of techniques which assumes that a variable cannot be explained only by its past and there is other information that is effective in explaining its behaviour. Each of these models represents a specific behavior of variables and shows their special relationships. In this study, in order to forecast the behavior of time series variables, single and double exponential smoothing techniques and autoregressive integrated moving average with X (leading indicator) were used. Each of the techniques that were used for forecasting is explained below:

### 3.1. Exponential Smoothing Methods

In the exponential smoothing method, the forecasting value of each variable is the weighted average of its predictive value in the last period and prediction error (Brown, 1959). For example, if $f$ is the predictive value of the interested variable and $t$ is time variable, the following equation will be obtained:

$$F_{t+1} = F_t + \alpha e_t$$

(1)

In the above equation, $\alpha$ is smoothing parameter and its value is between zero and one. Its value is determined using trial and error so that minimum prediction error is obtained. If this equation is considered without any time trend, it will be single exponential smoothing; if time trend is considered, it becomes double exponential smoothing (Hendman et al., 2008).

### 3.2. Arima Methods

To use this method, characteristics of the variable are constant over time. Thus, the variables used for forecasting in the models should show stationary trends over time (Noferesti, 1999). Thus, before estimating the models, the stationary state of the variables used in the models needs to be ensured. ARMA method consists of two classes of autoregressive (AR) and moving average (MA). Characteristics of autoregressive and moving average models are gathered and make up the model called ARMA (p, q), in which p variable is the lag numbers of studied variables and q is the lag number of error term. If the time series is differenced by $d$ times in order to show a stationary behaviour and then is given as ARMA (p, q) model, it will be said that the first time series is an autoregressive with moving average process from orders p, d, and q and is represented as ARIMA (p, d, q) (Gujarati, 1995). If there are other independent variables such as dummy variable in this model, the corresponding model without any difference would be ARMAX (p, q) (Teaser Yang et al., 1995). One of the most common methods of forecasting variables is ARIMAX methods, because it is used as both dependent variable and leading indicator for determining the future value of the variable. In fact, ARIMAX method has been used in various fields such as forecasting the number of tourists (Akal, 2004; Lim et al., 2008) and forecasting the number of cars that daily pass streets (Williams, 2001). In the field of economic forecasting, Claveria et al. (2007) focused on adding the leading indicator that increased the accuracy of the model.

In general, ARIMA method was introduced by Box and Jenkins (1970). This model contains three parameters of p, d, and q and has three steps including identification, estimation, and forecasting (Anders, 2004):

The first step is diagnosis (identification), in which actual values of q, d, and p are determined. To this end, Dickey-Fuller test and autocorrelation and partial autocorrelation graphs are used.

The second step is estimation, in which parameters of the model are estimated. In this study, the ordinary least squares method was used.

The third step is forecasting, in which the final model is used for forecasting time series. In many cases, the forecasts obtained from estimating the ARIMA method, which are especially used for a short term, are more reliable than the traditional econometric modeling approach.
At present, the success of time series models in the field of forecasting the economic variables such as price and inflation rates has led to their wider use in this regard. They are often used in formulating the behavior of these variables and forecasting their future values. However, the question is that: Which models should be practically chosen from among different time series models and how can this selection done? The answer of this question is important, because in several studies, only one of the above models have been selected as the forecasting model, based on which the forecasting has been done. In other words, the most important issue that exists in using time series models is the identification of appropriate models from among the wide range of these models which have minimum forecasting error (Fomby, 1989).

Discussions about the assessment accuracy of forecasting in economic models have attracted the attention of many economists in recent decades and several theoretical and experimental works have been conducted in this context (Moshiri and Morovat, 2006; Moshiri, 2001; Tayebi et al., 2009). In order to evaluate the accuracy of the forecasts made by different methods, different indices are used. The index that was used in this study was mean absolute percentage error (MAPE). Equation (2) shows the method of calculating this criterion.

\[
MAPE = \frac{1}{T} \sum_{t=1}^{T} \left| \frac{P - A}{A} \right| 
\]

In the above equation, P and A represent the predicted and actual values, respectively. The forecast error criteria represent the accuracy of forecasting (Sengupta and Datta, 2014).

3.3. Data

The data used in this study were obtained from the statistics by Iran Customs Administration. The websites of Iran Customs Administration and Tehran Chamber of Commerce, Industries, Mines, and Agriculture were used for data extraction. Share of each country is stated as a percentage and dummy variables are used to study the effect of sanctions on trading partners according to Approval 1737 of UN Security Council in 2006.

4. Methodology

The method used in this study was autoregressive integrated moving average with X (ARMAX) and its theoretical foundations were described in the previous section. Usually, in order to obtain a model that is effective in providing forecasting, time series data are used. Irregular fluctuations in a time series include scatter movements in a time series that do not follow the regular and given patterns. In the studies in which time series data are used, the stationary state of the variables should be examined. So, in the present study, the Dickey Fuller and adjusted Dickey Fuller tests were used in order to detect the stationary state of the time series variables. Afterward, ARMAX and single and double exponential smoothing methods were used.

ARIMA method was introduced by Box and Jenkins (1970); this model is in fact the augmented ARIMA model that has three parameters of p, d, and q. ARIMA(p,q) models are defined as follows:

\[
\Phi(L).\Delta^dy_t = \theta(L)e_t
\]

where \(\theta(L)\) denotes the moving average polynomial:

\[
\theta(L) = (1 - \theta_1L - \theta_2L^2 - \cdots - \theta_pL^p)
\]

\(\Phi(L)\) is autoregressive polynomial defined as equation (5):

---

25 Estimates and tests were done using EVIEWS 8.0 software.
\[ \phi(L) = (1 - \phi_1 L^1 - \phi_2 L^2 - \cdots - \phi_p L^p) \]

\[ \Delta^d y_t = \phi(L) \Delta y_t + \theta(L) \varepsilon_t \]

Where \( \phi(L) \) is a Lag Polynomial defined as

\[ \phi(L) = (1 - \varphi_1 L^1 - \varphi_2 L^2 - \cdots - \varphi_r L^r) \]

\( X_t \) denotes the sanctions dummy variable and vector of leading indicators at time \( t \). Equation (6) shows the general form of ARIMAX (p, d, q) equation (Jantarakolica and Chalermsook, 2012).

The ordinary least squares (OLS) method is used to estimate a variety of ARIMA models. Also, vector autoregressive model in the conditions with constant variance of error term of model and lack of serial correlation is separately estimated using ordinary least squares (OLS) for each of the equations in the system.

After estimating the model, in order to evaluate the ARIMAX model, the models with higher degrees of autoregressive and moving averages were estimated and compared with the initial model. Then, the appropriate models were determined based on stochastic error terms of estimation. In addition to estimating ARIMAX methods, the following methods were used for forecasting.

### 4.1. Single Exponential Smoothing Methods

This method is based on the work of a thermostat. When errors are large (positive), predicted values increase and vice versa. So, this process is frequently repeated until the error goes to zero. This method is defined as follows:

\[ F_{t+1} = F_t + \alpha e_t \]

Where \( \alpha \) is a coefficient between zero and one and \( e_t \) is the difference between the actual and predicted values. The only problem in this method is in determining the values of \( \alpha \) and \( F_t \); If two parameters are determined, calculating the forecast for the next period will be easily possible. This expression is equivalent to:

\[ F_{t+1} = F_t + \alpha(X_t - F_t) \]

Series average is usually used as the first forecast in primary data and is similarly calculated for the rest of years. To calculate \( \alpha \), values of 0.1 to 0.9 are placed in the primary data and each of them which leads to a lower MSE is selected (Haykin, 1994).

### 4.2. Double Exponential Smoothing Methods

This method is similar to single exponential smoothing methods, with the exception that trend is added to it. It is defined by the following three equations:

\[ F(t) = \alpha(X_t) + (1 - \alpha)F(t - 1) \]

\[ F(t) = \alpha(F_t) + (1 - \alpha)F(t - 1) \]
\[ f(t + h) = f'(t) \]  \hspace{1cm} (12)

In the above equations, \( F(t) \) and \( F'(t) \) are the forecasts using single and double exponential smoothing methods, respectively.

After estimating the above models, the optimal model was selected with the highest predictive power and the lowest percentage of errors using the mean absolute percentage error (MAPE) index for each of the countries.

5. DATA ANALYSIS RESULTS

5.1. Explanation and Analysis

In this section, first, share of each Iran's trading partners of agricultural exports have been investigated using graph analyzing and then predicted by econometrical techniques.

5.1.1. Share of Five Selected Trading Partners of Iran

According to the existence of fluctuations in the 10 major trading partners of Iran, only 5 countries were considered which constantly had a considerable share in Iran's agricultural exports over the past few years. In recent years, by releasing the statistics about Iran's exports and imports in 2012, Iran Customs Administration notified that Germany was the sixteenth trading partner of Iran in the mentioned year. Iranian exports to Germany was $ 350 million in the reported period. Figure 1 shows that the reducing share of Germany from Iran's agricultural exports as one of the trading partners. While the share of this country was almost 27% in 1996 and was considered as the first trading partner of Iran until 1999, this trend had been declined with the intensification of sanctions since 2005. As can be observed in Figure 1, share of Germany from Iran's agricultural exports reached less than 10% in 2005.
United Arab Emirates has been another studied trading or intermediary partner and, according to the statistics released by Iran Customs Administration, it was the third trading partner in 2012 by importing $3.5 billion. Figure 2 shows that the share of this country from Iran's agricultural exports had been almost increasing until 2003; but, with the sanctions in 2005 and in competition with Iraq, this value was decreased.

Iraq, by occupying the position of the UAE, became the largest trading partner of Iran in terms of the value of non-oil exports in 2005 (except, gas condensates). Figure 3 shows that, although the share of this country from Iran's non-oil exports was less than 5% in 1996-2002, its trend was ascending so that, by importing non-oil commodities from Iran with the value of $6.25 billion as the largest trading partner, it had constantly had the share of over 20% up to 2012.
Figures 4 and 5 represent the shares of both Hong Kong and Afghanistan from Iran's agricultural exports as a part of non-oil export. Hong Kong since 1997 and Afghanistan since 2002 had been among the ten major export partners of Iran. Considering the high share of Iraq from Iran's export, these two countries had appropriate second and third places in recent years with the share of less than 10%.

Source: Data released by the Islamic Republic of Iran Customs Administration

Figure 4. Hong Kong’s export share of agricultural products during 1996-2012

Source: Data released by Islamic Republic of Iran Customs Administration
Figure 5. Afghanistan's export share of agricultural products during 1996-2012

Source: Data released by Islamic Republic of Iran Customs Administration

5.1.2. Analysis

Considering that most of the time series data are non-stationary, stationary state of these variables should be investigated before estimating the model. Many tests are done to check stationary state of variables, the most widely used of which unit root tests are including Dickey-Fuller and Phillips-Perron. Stationary state of the variables was tested by augmented Dickey Fuller in this model and the table shows the unit root test results. To ensure the unit root test results, values of the unit root tests are reported as follows.

Table 1. Unit root test results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Test</th>
<th>Critical value</th>
<th>Calculation value</th>
<th>Significance level</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>HK</td>
<td>ADF</td>
<td>4.72-</td>
<td>5.54-</td>
<td>1%</td>
<td>I(1)</td>
</tr>
<tr>
<td>Irq</td>
<td>ADF</td>
<td>3.32-</td>
<td>3.53-</td>
<td>10%</td>
<td>I(1)</td>
</tr>
<tr>
<td>Afg</td>
<td>ADF</td>
<td>3.36-</td>
<td>3.60-</td>
<td>10%</td>
<td>I(0)</td>
</tr>
<tr>
<td>UAE</td>
<td>ADF</td>
<td>3.34-</td>
<td>3.64-</td>
<td>10%</td>
<td>I(2)</td>
</tr>
<tr>
<td>Ger</td>
<td>ADF</td>
<td>3.38-</td>
<td>3.83-</td>
<td>10%</td>
<td>I(1)</td>
</tr>
</tbody>
</table>

As can be seen, the variables of shares of Hong Kong (HK), Iraq (Irq), and Germany (Ger) were stationary after the first differencing. Also, the variable of the share of United Arab Emirate (UAE) was stationary after two differencing, while the variable of Afghanistan's share was stationary.

To specify which of the studied variables were associated with their past, the correlogram diagrams including autocorrelations (AC) and partial correlations (PAC) were drawn. Table 2 shows that the variable of Hong Kong's share did not depend on its prior period, while the share variables of Afghanistan and Germany depended on two prior periods. The variable of Iraq's share depended on three prior periods and that of Emirate's share depended on one past period. Although these charts can be used to select the degree of AR and MA of the models, but in order to achieve a model with fewer error percentage, other grades of moving average (MA) and autoregressive (AR) were evaluated.

Table 2. Results of the correlogram graphs

| AC & PAC | Variable | AC & PAC | Variable |

81
In this study, because the forecasting was based on the actual behavior of the variable in its past, all of the variables that were stationary after one or two differencing were used without any differencing. Further, to ensure the accuracy of estimation, after estimating different models, stationary test of the error term for each model was done to denote that the error term of each model was stationary; otherwise, the model estimation would be wrong in terms of specification error of the models. To determine the parameters $p$ and $q$ for each model, PAC and AC graphs and Akaike criterion were used, respectively, the values of which are given in table 3 by considering outsourcer and within-sample errors. For example, the selected Iraq models, due to less internal sample errors, was an ARMAX $(5, 0, 2)$. Note that the fourth lag of parameter $q$ and first lag of parameter $p$ was removed using restricted $F$ test. In the next step, the selected models were estimated by ordinary least squares methods and stationary tests on the residuals obtained from the estimated model which specified that the residuals were stationary. The related results are demonstrated in table 4.
Table 3. Error percentage of forecasting in ARMAX method

<table>
<thead>
<tr>
<th>Variables</th>
<th>Forecasting method</th>
<th>Within-sample forecast error</th>
<th>Outsourcer-sample forecast error</th>
</tr>
</thead>
<tbody>
<tr>
<td>HK</td>
<td>)0 * 0 * 0(ARMAX</td>
<td>2.26%</td>
<td>1.68%</td>
</tr>
<tr>
<td></td>
<td>single</td>
<td>30.12%</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>double</td>
<td>28.98%</td>
<td>-</td>
</tr>
<tr>
<td>Irq</td>
<td>)5 * 0 * 2(ARMAX</td>
<td>2.87%</td>
<td>0.41%</td>
</tr>
<tr>
<td></td>
<td>single</td>
<td>4.48%</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>double</td>
<td>14.55%</td>
<td>-</td>
</tr>
<tr>
<td>Afg</td>
<td>)4 * 0 * 2(ARMAX</td>
<td>0.44%</td>
<td>0.09%</td>
</tr>
<tr>
<td></td>
<td>single</td>
<td>12.90%</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>double</td>
<td>5.93%</td>
<td>-</td>
</tr>
<tr>
<td>UAE</td>
<td>)2 * 0 * 1(ARMAX</td>
<td>4.92%</td>
<td>0.79</td>
</tr>
<tr>
<td></td>
<td>single</td>
<td>10.00%</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>double</td>
<td>12.92%</td>
<td>-</td>
</tr>
<tr>
<td>Ger</td>
<td>)5 * 0 * 2(ARMAX</td>
<td>3.93%</td>
<td>0.99%</td>
</tr>
<tr>
<td></td>
<td>single</td>
<td>34.65%</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>double</td>
<td>41.13%</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: Research findings

Table 4. Results of ADF test for the fitted residual

<table>
<thead>
<tr>
<th>Residuals</th>
<th>T-statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Res_HK</td>
<td>5.32-</td>
</tr>
<tr>
<td>Res_Irq</td>
<td>7.49-</td>
</tr>
<tr>
<td>Res_Afg</td>
<td>4.24-</td>
</tr>
<tr>
<td>Res_UAE</td>
<td>8.78-</td>
</tr>
<tr>
<td>Res_Ger</td>
<td>5.92-</td>
</tr>
</tbody>
</table>

Source: Research findings
*Significance at level of 1%

5.2. Results

After selecting each model, the share values for each partner of Iran's export can be forecasted during 2013-2015. The predicted values for this period are reported in table 5. Forecasting average of this method in the predicted years are given in the last column of the table.

Table 5. Forecasted values by ARMAX methods

<table>
<thead>
<tr>
<th>Variable</th>
<th>Method</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>HK</td>
<td>ARMAX(0-0-5)</td>
<td>7.39%</td>
<td>5.59%</td>
<td>6.29%</td>
<td>6.42%</td>
</tr>
<tr>
<td>Irq</td>
<td>ARMAX(5-0-2)</td>
<td>31.33%</td>
<td>28.71%</td>
<td>27.56%</td>
<td>29.20%</td>
</tr>
<tr>
<td>Afg</td>
<td>ARMAX(4-0-2)</td>
<td>7.68%</td>
<td>7.39%</td>
<td>7.09%</td>
<td>7.38%</td>
</tr>
<tr>
<td>UAE</td>
<td>ARMAX(2-0-1)</td>
<td>13.63%</td>
<td>14.22%</td>
<td>14.67%</td>
<td>14.175</td>
</tr>
<tr>
<td>Ger</td>
<td>ARMAX(5-0-2)</td>
<td>4.45%</td>
<td>4.75%</td>
<td>5.23%</td>
<td>4.81%</td>
</tr>
</tbody>
</table>

Source: Research findings

6. CONCLUSION

The purpose of this study was to forecast the share of each of the 5 selected export partners of Iran with an emphasis on agricultural exports and considering the sanctions until the end of the fifth development plan. In this regard, sanctions were assumed to be effective for the share of Iran's trading partners. Also, by continuing international sanctions against Iran, this impact would be such that Iraq would remain the largest trading partner of Iran. Based on the achieved results, shares of Germany and United Arab Emirates (UAE) would rise up the end of the fifth development plan; but, the share of Iraq as the first export partner of Iran...
would decrease as the same time. Such a reduction could be also found for the cases of Afghanistan and Hong Kong. Therefore, by considering the ranking, the position of export partners in Iran's agricultural products would be changed to Iraq, UAE, Afghanistan, Hong Kong, and Germany at the end of the fifth development plan. It should be noted that Iraq, UAE, and Afghanistan would be located on the first to third places in the case of continuing sanctions. The most important objective of these oppressive sanctions is to enfeeble national economy by restricting trade with other countries. Since trade and economic development are two sides of a coin, the amount of trade development and level of exchange with other countries have a direct relationship with the level of well-being of people and strength of national economy. Under these imposed sanctions which limit Iran's oil exports and decline oil revenues, Iran's currency market is thirsty for new foreign exchange sources. Accordingly, maintaining and developing non-oil exports are the important issues. On the other hand, the government plays an important role in strengthening the development of non-oil exports. A part of the government's task is a focus on targeted programming to develop trade relations with the countries which are more beneficial for the national economy. Therefore, the aids that should be made by the government to trade development with other countries can be divided into several categories:

1- Identifying potential business opportunities in new markets and introducing them to the traders and merchants of the private sector;

2- Trying to eliminate non-tariff barriers on the way of trade development; and

3- Trying to establish "free trade agreements" with other countries.

Economic sanctions in the present situation of Iran are a reality and have a direct effect on its business opportunities with the world. So, although we may not be able to reduce or eliminate these sanctions, at least we should have accurate knowledge about them which lets us plan for compensatory policies in the best possible form. However, the neighbouring countries of Iran, due to their special characteristics and grants (such as common land and sea borders, small distance, and common cultural, religious, linguistic, etc. issues) are of strategic importance compared with other partners. So, all of these countries must be placed in priority for any plans to foreign trade development. On the other hand, there is the possibility of re-export produced goods for trans-regional markets through neighboring countries. In the case of realizing this goal, the impact of these sanctions on Iranian foreign trade can be reduced. Existence of the old political and economic relations between the neighbors can lead to minimizing the effect of international political tensions. So, if reducing the impact of abroad pressures on the national economy is aimed for, share of the neighbors should be increased in foreign trade.

The predicted results clearly confirmed the idea that our trade relations with the neighboring countries have less vulnerability from international sanctions and programming to increase the share of these countries in our foreign trade will lead to reduced risk of vulnerability to the national economy caused by international political tensions.
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The role of culture in international marketing, relying on Resistive Economy

Ali Naeje Haghighi *26, Shideh Salarian27

ABSTRACT: Resistive economy concept is one of the unique concepts which as some experts state, in the field of theory and practice, has no precedent in the world. Considering the fact that most of the world’s countries are multicultural and also they are growing rapidly, even in relatively the same sex countries, people are remarkably different in recognition, observance and practice of cultural norms. One factor contributing to the success of societies in global marketing activities, is understanding of cultural factors in the target markets. Lack of attention to this issue, will cause irreparable damage to communities. Therefore, a proper understanding of culture is an essential component in the development of effective marketing strategies and best practices of resistive economy. In this paper, the concept of culture is discussed. Then the main influencing factors on culture like: Hofstede's four-dimensional model, marketing, international marketing, and finally the role of culture in international markets with an emphasis on resistive economy have been studied. The results showed that there is a direct relationship between culture and marketing. In other words, success in the International Marketing depends on this issue that Marketing decisions conform to cultural norms and these criteria are the criteria to accept or reject marketing.

KEYWORDS: Culture, International Marketing, Resistive Economy.

26 PhD student in Entrepreneurship, Islamic Azad University of Aliabad Katul
27 Master of Business Management-Marketing, Tehran University Farabi Pardis
1. INTRODUCTION

Before the seventies in the current literature, development, culture and cultural values, did not have rightful place and economic factors form the most significant scope of development discussion. But in the seventies with acceptance of this issue that when development emphasize on just economic concept will contribute to conflict and social crisis, Other factors, such as cultural factors were considered (Nazarpour, 1389). If the twentieth century, more than anything had the economic characteristics, twenty-first century, is cultural century and its cultural competition among nations, has drawn from economics to culture. By the help of scientists the economy is experiencing a cultural spin. When the cultures have been in fierce competition and the countries which are the owners of industries and cultural products in the world, seriously take advantage of this powerful knowledge, any management and cultural engineering without this fundamental fact and powerful tool will suffer from inefficiency and crisis. Now it seems that cultural competition among nations rather than competition between governments is competition between institutions and organizations. These cultural institutions and organizations should take advantage of scientific approaches in knowledge management that one of these new approaches is marketing. Marketing knowledge is about building a stable and satisfactory relationship between the organization and the public on the needs of the people, in a competitive environment (Mohammed, 2009). So marketing has a very wide range and it is useful for any organization that satisfies a need or a desire, in other words, marketing encompasses all aspects of human life. (Roosta et al., 2006). If alongside economic factors in society, cultural factors also will take into serious consideration and if conducive values of development strengthen in the society, there will not be disproportionate gap between Islamic culture and today’s economy (Azimi, 1992).

It is very important that we discuss about the importance of the concept of culture in international marketing after recognition of culture and international marketing. Culture is important in local marketing but its importance in international marketing will be doubled because in International Marketing, we are facing with people who have different language, nature and culture. All these aspects create problems for people’s management in the international marketing therefore, the understanding of cultural differences before entering the international business is very significant for the organizations (Ahmed & et al, 2014).

Motivation of access to international markets for economic development using cultural values and ideals is possible through a detailed explanation of the resistive economy and the valuing jihadist movement. In this paper, followed by introduction in the second section, culture, cultural components, factors affecting the culture, Hofstede’s four-dimensional model, cultural imperialism, culture and globalization, will debate. In the third section: marketing, international marketing and international markets features are discussed in the fourth section some explanations about resistive economy will present, fifth section is about the role of culture in international marketing, relying on Resistive Economy, Finally, discussion, conclusions and recommendations are presented.

2. LITERATURE REVIEW

It is important for international marketers to know if they are supposed to integrate appropriate marketing system according to the requirements of each market or to use the same integrated marketing strategy used in the original or home country for different markets with various needs that are willing to gain the most market sharing in each market. Dynamism of international businesses and their multi-dimensional nature demand understanding of cultural complexities among countries.

Antunes et al. (2013) investigated the effect of national culture on the strategy of international marketing and the action of the subsidiary company from Portugal. They aimed to find out how small and average companies develop their complex strategies of international marketing in their abroad branches. In their study, they applied Hofsted’s (1990) theoretical framework in dimensions of power distance, uncertainty avoidance, individualism, male-orientedness, and long term orientation to evaluate the cultural differences among the countries and commercial methods of business to analyze the standardization of complex strategies of international markets for subsidiary companies of foreign Portuguese. The study benefitted from exploratory and qualitative methodology in which semi-structured interviews of four different sections of companies were done to reach desirable understanding of the strategy of international marketing. Findings
indicated that national cultural differences had strong impact on the marketing strategies of subsidiary companies.

Yapark (2008) made an attempt to examine the critical review of culture study in the process of international marketing and suggested some points for the future developments in his paper entitled “culture study in international marketing; critical investigations and future suggestions”. He conducted a comprehensive investigation of previous and current ways of culture study in international marketing and highlighted the gaps in previous research and made suggestions for future research. Results revealed that five ways in line with previous studies were found and four new solutions were suggested for future research developments.

Ahmed et al. (2014) conducted a study to explore the significance of culture in the success of international markets. The found that the culture of an organization in international markets is of high importance, and it is important for an organization to build and protect the culture for its competitive advantage. The obstacles each organization faces in international markets as well as different types of culture in terms of the essence of organization and market were explained in the study. It was found that if an organization was to perform its business activities in foreign markets, understanding of the culture market was necessary. The culture of an organization includes norms, values, and beliefs, and it is necessary for an organization to attend to different aspects of culture such as religion, value, attitude, education, social organization, technology, rule, and aesthetics and language. These eight dimensions of culture help to the understanding of culture market and each organization.

Ghassemi et.al (2014) conducted another study to look into the effect of coordination of international marketing strategies with external dimensions of organization (external coordination) and subsystems of international marketing (internal coordination) on the export performance of exporter companies of technical services. Data were collected from exporter companies of technical services among which 41 companies, that covered 95% of the export of technical services of the country, were selected with the application of non-probability judgment sampling for the purpose of the study. Results revealed that the two variables i.e. internal and external coordination and their interactional impact affected export performances of the companies. It was also found that internal coordination was more effective than external coordination in case of export performances. Quantitative model of the study based on the Step Wise Multivariate Regression Analysis showed that internal coordination had the value of 225% in prediction of export performances of companies while external coordination had the value of 162% acknowledging the high effectiveness of internal coordination on export performances of companies.

Salehnia et al. (2010) aimed to probe the role of culture in economic development. It was pointed that most of scholars believed that development has got an economic concept in the past decades. In other words, development had only economic aspect, and countries were to equip their economics to gain real development. However, this condition has changed as some countries encountered failure due to their sole planning and focusing on economics to reach development, leading to disregarding the one-dimensional concept of development. Findings showed that the main form of all activities done in a country is to a large extent dependent on its cultural essence. Although protection of a country apparently depends on dynamism and independence of political and economical activities, the way people act in economy or policy in other sections relies on the culture of social mechanisms of that country. Therefore, it is largely believed that the source of development lies in cultural development. Therefore, it is the role of governments to change their view toward human being as a cultural creature to reach developments in all aspects.

Bazkhaneh et al. (2013) carried out a research to investigate the relationship between culture and resistive economics emphasizing the role of national media. They expressed that the most important factors leading to the formation of resistive economics include insight, attitude, and culture of society which is considered as motivating factor of human activities. In order to fulfill the purpose of resistive economics, the required culture of its appearance should be institutionalized in the society paving the way for all the people of the society to be in line with this purpose. Applying descriptive-analytic methodology, the study highlighted the role of society culture in the progress of resistive economics and the impressive role of national media in this process. Finally, some suggestions for better actions were proposed.
Sadat Najafi Zadeh (2008) did another study to evaluate the effective factors on the selection of standardization strategy or adjustment of international foreign companies in Iran. He aimed to answer this question that how product dimension and effective international factors influence the range of the selection of standardization strategy and adjustment, paving the way for international marketers to go for one appropriate strategies in line with the requirements of the foreign country market. Data were collected from five international foreign companies in Iran. Data were analyzed to test the hypotheses of the study. Results concluded that the factors connected to product dimension and effective external factors are in significant relationship with standardization strategy and adjustment. It was also found that product labeling (related to product dimension) and cultural-social and legal-political factors (linked to effective external factors) are among the points leading to the application of adjustment strategy by international decision makers of the studied companies.

Similarly, Hosseini et al. (2013) made an attempt to investigate the effective factors on market strategy to define market strategy as an important tool applied by companies that increase their product level and gain profit from international exchanges. They pointed to the role of strategies of international market entrance as well. The role of culture, moral principles, and internet in market strategy were also examined, and the study proposed some cultural patterns to understand and classify the culture, test the background of national cultures, and look into culture stability among other cultures. Finally, a framework of international marketing strategies was introduced.

3. CULTURE

The concept of culture has been used first by Sir Advart Barnett, English anthropologist, in 1871. He sees culture as a complex set including: Knowledge, beliefs, arts, laws, morality, customs and any other capabilities and habits acquired by man as a member of society. In other words, culture is: Common system of beliefs, values, customs, behaviors and issues that members of a society use it to adapt to their world and their relation to each other and transfer it intergenerational through education (Salehnia et al., 2010).

Culture is a set of beliefs and behaviors of human groups. Moeen Persian encyclopedia has defined culture as a word which is composed of two words "Far" and "Hang" (in Persian it is “Farhang”) which means literature, education, science, knowledge, wisdom and culture. Culture is result of biological, environmental, psychological and human history factors. Due to the complexities of human relationships and set of traditions, even simple things which human needs as animals, form as cultural patterns. Culture is different way of life or the lives of a group of people. For example, Japanese show a nation or a society. A Japanese person can be directly observed but Japanese culture is abstract rules or trends observed in orderly ways of life of the people there. Cultural environment consists of institutions and other forces that influence fundamental values, institutions, preferences, and behaviors of society. People bring up in a given society, the society that shapes their basic beliefs and values. They depict a world for themselves that determines their relationships with themselves and others (Habibi, 2013). Culture is the values, traditions and customs that are common in the majority of a society's people and it encompasses all stable social behaviors and its most important feature is the stability and cohesion. In long-term consuming behaviors of human, are considered as sustainable behaviors. This behavior cannot be changed without changing the culture. So if you are looking for a change in consuming behavior of society, we should ascribe special credibility for culture (Moses, 2009).

Scientists have proposed various definitions of culture that some of them are mentioned in the table below:

<table>
<thead>
<tr>
<th>(Kroeber, 1952)</th>
<th>-Culture is the greatest virtue in arts and humanitarian affairs which is known as high culture</th>
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<tr>
<td></td>
<td>-Integrated model of knowledge, beliefs and human behavior that depends on the capacity of symbolic thought and social learning</td>
</tr>
<tr>
<td></td>
<td>-The collection of attitudes, values, goals and common actions that</td>
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</table>
identifies an agency, group and organization

(Moeen2003) - Culture is a set of beliefs and behaviors of human groups. In Moeen Persian encyclopedia, the word "culture" (Farhang in Persian) composed of two words "Far" and "Hang" means curtsey, education, science, knowledge, wisdom and Customs.

(Ahmed & et al, 2014) - Culture is common norms and values of each organization. Culture reflects the customs, religion, beliefs and traditions of a group of people.

(Gallivan & Srite, 2005) - Culture is a combination of values, meanings and norms. While some aspects of culture are visible at the moment. (As symbols and rituals) Understanding the culture of a group needs a deep investigation about culture-without such a profound study observers who are not informed and knowledgeable may think wrong about beliefs and behavior of the group members which their culture in under study.

(Carrigan & et al, 2005) - According to Shane about the awareness levels of Azodo Ruby in 1994, they claimed that culture can be studied in three interrelated ways: 1. Symbols, artifacts, visible procedures and traditions. 2. Values and beliefs which can be separated by the transferor. 3. Hypothetical models which may be performed without conscious awareness.

(Bodley, 2000) Thematic: Culture encompasses all topics or categories in a list, Such as classes in a social organization and themes of a religion or classes in an economy.

Historical: Culture is social heritage, or tradition which will pass on to future generations.

Behavioral: Culture is the shared learned human behavior, a way of life

Normative: Culture is ideals, values and the rules of life

Active: Culture is the way which humans choose to adapt themselves to the environment or living together to solve the problems.

Subjective: Culture is a complex set of ideas or learned habits which prevent mental impulses and distinguishes man from animals.

Structural: Culture consists of the beliefs, symptoms or associated and systematic behaviors.

Symbolic: Culture, is fake meanings that are common in a community.

3.1. Components of Culture

Beliefs: are a set of mental processes that are effective in knowledge and estimation of people with respect to goods and services.

Values: are subjective indicators which customers use them to identify the appropriate behavior. Values are generally stable over time and are accepted by most members of a given market.
Customs: are evident behavioral models in individuals which occur in certain situations from individuals. Traditions are visible during major events of People (Doole & et al, 2004).

### 3.2. Factors Influencing the Culture

In understanding the culture all its aspects must be studied. This involves an examination of the following factors.

- Technology and material culture
- Social Organizations
- Education
- Values and thinking
- Religion
- Language
- Aesthetics
- Laws and policies (Doole & et al, 2004).

#### 3.3. Hofstede’s Four-Dimensional Model

Preparing business in the twenty-first century for competition is strongly related to codification of strategies to anticipate and respond to rapid changes in the global markets (Craig & et al, 2001). Gerd Hofstede, influential and well-known writer and researcher in the field of national and organizational culture, understands this fact that there are national and regional cultures in the world which have a major impact on the behavior of firms and consumers. He believes that cultural differences in various societies are caused by four main aspects:
• **Individualism vs. pluralism**: Do people of a society prefer to undertake individual or collective responsibilities?

• **Power distance**: Is power distance in a community lot or a little? For example, in the Arabic countries and Iran the power distance is much more than U.S.A and European countries.

• **Avoidance of uncertainty**: In general, countries that avoid the uncertainty are more regular and employees prefer to stay longer with their employers.

• **Masculinity versus femininity**: Indicates specific traits in different cultures. Masculinity is more associated with competitiveness, ambition, collecting material and while Masculinity more pays attention to interpersonal relationships and quality of life (Soares & et al, 2007).

### 3.4. Cultural Imperialism

In primary form, cultural imperialism is as a result of national-governmental occupation and in this process different aspects of local culture and way of life will be raised. But cultural imperialism ended up at the end of imperial and colonial period and a new type of product and increased services becomes clear in the cultural imperialism that strong and large organizations can offer their products in terms of culture in the world. Disney is one of the most powerful companies which buy the local TV station in the world and exhibit public programs for children or Coca-Cola and its global distributor who encourage people all over the world are to taste their drink or Microsoft Corporation which distribute computer programs in the world. One concept of the globalization is the view that globalization is in a huge global relation and in higher degrees results in a cultural assimilation. Cultural assimilation occurs largely through the products. But there is a worry and fear in this case and the fact is that the use of products will change the values. So if you have already drunk enough bitter coffee, you start to drink carbonated beverages. Then you enjoy it and it becomes a daily habit and in other words it will be a part of your culture. Cultural imperialism is supported by trade policies that have organizational benefit in the world development. These policies provide a lot of advantages in global relations (Leidner, 2010).

### 3.5. Culture and Globalization

Globalization is a global system which runs in political institutions, technology and culture in the West, and they pay less attention to its symptoms and the reactions which it cause (Salzmon, 2008). Friedman (2000) states that the integration of markets, governments and technology is in a way that individuals, companies and governments are working to gain the whole world deeper, faster and cheaper than ever. (Merriless, 2007). Lester Pearson states: Various civilizations must learn to live together in peaceful interaction; they might remember each other’s experience, learn about each other's culture and ideas and add the richness of their life. If it won’t be in this way in the crowded and small world, we see nothing but a misunderstanding, tension and conflict (Huntington, 1378).

### 4. MARKETING

Modern and traditional marketing which has been challenged in the postmodern era, has found its identity in the second half of the twentieth century. Basic principles which define the modern marketing and its social role emerged in this decade. Inspired by the theories of Alderson in 1970s, marketing concept was considered and crystallized in the form of modern marketing. Marketing concept has found its position in modern human history order and it explains the relationship between different organizations and their consumers and stakeholders. This special relationship - market and customer orientation has expanded as the wide range of institutions, corporations, non-
profit organizations, government agencies, art, religion, and others. This concept has become a belief not only in marketing, but also in modern public culture to know your customers and serve them. In fact, modern marketing forms one of the cultural foundations of social and contemporary society (Urban, 2005).

Despite the imagination of most people, marketing, just not summarizes in short-term attempts to sell semi-essential, luxury and ceremonial goods, rather, it consists of a series of activities of production, distribution and trade which transfer the goods faster and easier to the final consumer. In fact, marketing is defined as a social - managerial process which provides their needs and desires by individuals and groups through production and exchange of goods and services with each other by means of an important intermediate named currency in a place called market. (Habibi, 2013). Totally marketing process, is a comprehensive performance and a set of processes for creating, communicating and creating value for customers and management of relationships with their clients to create value and profitability in a business. (Keefe, 2008). According to Carson and Gilmore, marketing is a process which is surrounded on all organizational processes. He believes that most entrepreneurs do not consider marketing only as a function but also they are looking for marketing to reach customers. In other words, from their perspective, marketing forms the main core of the business (Oddy, 2009). Marketing means doing activities such as buying and selling of goods, transport and storage of them.

**Marketing**: is the collection of commercial activity that guides goods or services process from the manufacturer to the consumer or final user.

Marketing is the process by which individuals and groups provide their needs through the production and exchange of goods and benefit with others.

**Marketing is defined as**: the relationship between the value of the product (goods or services) and client. Marketing is sometimes also known as the art of selling. But sale is considered as small function of marketing (Kotler & et al, 2012). There are two aspects of marketing: 1. on one side, marketing is kind of management approach that focuses on customer satisfaction. 2. Furthermore, it is a series of activities to implement the marketing philosophy (Habibi, 2013).

### 3.1. International Marketing

In its simplest level, international marketing is a process in which a business has to decide on its marketing composition over national borders. Its most complicated level includes developing a production unit and coordinating company's marketing strategy all around the world (Doole et al, 2004). In another definition international marketing is performing business tasks to supply goods and services of a company to its customers in more than one country in order to achieve profit (Ghauri et al, 2005). Globally, managers have recognized the need to increase companies and organizations, to develop skills, capabilities and knowledge to compete in international markets. International marketing refers to marketing tasks, profits and operations of an organization in more than one country (Doole, 2012).

On a global scale, marketing is naturally associated with problems more complicated than companies' internal marketing. These usually occur in a wide level involving tasks, management systems, certification, strategic association and common investment. International marketing requires a variety of environmental factors. It also manifests its development form through rapid rate of change in technological, economic, social and political forces. The changes are mostly influenced by various rates of the market (Craig, 2005). Stages and principles of marketing are
considered as standards and can be implemented in all markets and countries. The only point used to distinguish domestic and international marketing is their activity field. This important difference has led to emergence of the novel issue of international marketing of the most considered matters in which is being aware of issues in other countries, adopting proper strategies to enter various countries and markets and taking specific actions in markets associated with lower trust and higher risk for foreigners (Babaei, 2008). In general, actions in marketing are divided into two parts: controllable and uncontrollable. Controllable factors include goods and services policies, sales plan, pricing and distribution which are called company's marketing composition and are directly controlled by the company itself. The company can conduct and implement its marketing composition plan based on market's competitive conditions, legal limitations, consumer interests and strategies.

Uncontrollable factors of international marketing are subdivided into two sub categories: domestic and foreign. Governmental general policies, legal structure and economic conditions are among domestic elements. In the foreign subcategory the conditions may vary (or even be contradictory) for every certain country. Some of these elements are political and economic status, technological level, geography and culture (Babaei, 2008).

3.2. Characteristics of International Marketing

The concept of mental distance and lack of environmental trust has attracted considerable attention in studying international distribution channels. Differences between transacting parties and their international markets it determined through differences in social, cultural, political, technical and economic environments. Differences such as regional time, language and systems put exchange of methods and management pattern models in trouble and have considerable effects on legal management of border relationships (Skarmeas et al, 2007).

When oppositions arise against domestic markets, international operations are not used by higher levels of lack of environmental trust which originates from lack of knowledge and information on foreign markets and numerous job environments in which companies are working. For example, currency rate changes and problems concerning changes of customers' needs and preferences are more investigated in multinational marketing channels in which transacting parties are far from each other (Cleveland and Laroche, 2007).

4. RESISTIVE ECONOMICS

In scientific literature the concept of resistive economics has not been employed so far but the perception can be deduced from viewpoint of Iran's leader, Ayatollah Khamenei, firstly used in 2010 in a meeting with Iranian entrepreneurs and later was emphasized in many speeches, and perspective of economic experts. Some definitions of the term "resistive economics" are presented below.

<table>
<thead>
<tr>
<th>Ayatollah Khamenei (2012)</th>
<th>Resistive economy is an economy providing people with backgrounds of development and growth event in sanctions and under pressure</th>
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<tr>
<td>Ghasemi, 2012</td>
<td>Resistive economy means identifying pressure fields and consequent endeavor to control and neutralize them and transforming such pressures in ideal conditions to opportunities, the outcome of resistive economy, reduces dependencies and emphasizes on advantages of domestic production and make effort to achieve self-sufficiency.</td>
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<tr>
<td>Mombeini et al, 2013</td>
<td>Resistive economy is economic development, solving problems of economic subsections to prevent enemies' preferences and improving public well-being. Such a resistive economy should be active and dynamic not closed and dependent</td>
</tr>
<tr>
<td>Tari et al, 2012</td>
<td>Resistive economy can be defined as an economy in which country's economic security is maintained while actively interacting foreign countries and making use of free trade facilities. Moreover, changes of international economic environment and their threats have the smallest negative effect on the long term procedure of macroeconomic variables. In a resistive economy one or more sections of country's economic capacities are not overemphasized but effort is made to exploit all economic capacities as much as possible.</td>
</tr>
<tr>
<td>Mombeini, 2012</td>
<td>Resistive economy is a country's economic strategy in certain conditions. It produces and distributes specific goods and invests to reduce dependency on other countries, especially invading and enemy countries, so that if it fails to provide essential goods required by people from other countries, it can achieve mass production of those goods relying on local capacities.</td>
</tr>
<tr>
<td>Taj Abadi, 2012</td>
<td>Parallel economy: respecting its needs the Islamic government of Iran funded revolutionary institutions. Hence, it requires to develop parallel institutes to meet Revolution objectives Recovery economy: is a kind of economy seeking resistance, removing damages and porosities and recovering old and inefficient economic structures and institutions Defensive economy: concerns identifying invasions, attack and defense Model economy: essentially, resistive economy is not a short-term approach but has a macro-scale look on Iran's economy and is considered as a long-term action. We seek an ideal economy which is both Islamic and inspiring and efficient for the Islamic world and provides for formation of the great Islamic civilization.</td>
</tr>
<tr>
<td>Mir Moezi, 2011</td>
<td>Resistive economy is a resistive one against a variety of conditions. It develops scenarios respecting all domestic and foreign strengths and weaknesses and external threats and opportunities. It also has plans for every circumstance and is the opposite point of consuming and dependent economy. Resistive economy is, in fact, identifying pressures and making effort to control and neutralize and transform them to opportunities in ideal conditions.</td>
</tr>
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</table>

5. **The Role of Culture in International Marketing Relying on Resistive Economy**

Culture is associated with numerous consequences for marketers in formulating the effective message of marketing in cross-cultural scenarios. Since the present world is considered as a global economy it requires a correct understanding of culture and its effects. Therefore, it is necessary for marketers to be able to enhance their understanding of purchasers' behavior in international markets. The influence of culture on individual perceptions and behaviors while analyzing and deciding on purchase items and on decision-making (as a part of purchasers' behavior) is of great importance but is usually neglected by marketers who seek a proper pattern for all global markets (Fulford, 2001).

Cultural properties likely to influence marketing decisions include:
Stability of cultural values and subcultures: people in every community possess specific beliefs and values. Basic beliefs and values of a community are highly stable and individuals resist against factors threatening them. Hence, marketers have to pay sufficient attention to their potential customers' beliefs.

Subculture: every society possesses certain subcultures. Subculture includes groups of individuals in a certain culture who behave based upon different patterns making them distinct from other groups in the same culture. Members of subcultures have common beliefs, preferences and behaviors. Groups of subcultures can be selected as a target market if they have purchase behavior and different demands. Markets of different countries are influenced by a variety of factors one of the most important of which is culture. Advance of a successful international market depends highly upon understanding and recognizing differences between various countries and their different cultures.

Culture is a complicated whole: and involves knowledge, beliefs, art, morale, traditions and every capability and habit of members of a society influencing individual consuming behavior. Complicated whole means that culture is a system with interdependent components and this makes it difficult to identify it. Social and cultural factors affect all aspects of consumer and purchaser's behavior and the global variety of these factors is of considerable significance for most companies in their planning and implementing marketing strategies. Difference in languages change the mean of an advertisement and difference in cultural structure may cause an item meet needs of various levels of that society. In a certain culture, a sewing machine may be considered as an entertaining device but a necessary one for survival of a family in another (Habibi, 2013).

In international marketing literature culture is defined through various concepts. Lee Yung (2005) presented an extended definition of culture which involves values, habits, norms and behavioral patterns of a national group. House (2004) defined culture as "values and actions contrived in a society". Hofstede defines national/social level culture as "mind software" or mass thinking plans distinguishing one group from another (Yapark, 2008). Nakata and Hang (2002) define culture as "an overall composition of knowledge, belief, art, morale, law, tradition and skill and other habits acquired by individual members of a society". This definition may be the most appropriate one in international marketing since involves culture essence as a whole individual organizational system and social interactions.

While culture is usually studied in Hofsted's (1983) national level, Lee Yung (2005) and House (2004) emphasize on composition level thinking and state that in international marketing, culture is employed as a structure involving several intricate levels and this is to achieve a promising outcome in research and practice. For example, Lee Yung (2005) suggests that culture can be studied from the highest level (such as global culture) to national, industrial, organizational and even individual levels. In the global level, it is investigated regarding global networks, multinational institutions and cultural borders. The national level involves intricate organizations and networks devised in local culture and in the lowest level culture formation starts from sociability process. For instance, cultural values transferred to people from higher levels of a culture are acquired to form personal values and this causes an interaction among the mentioned levels (Yapark, 2008).

Moreover, it is noteworthy, in determining the relationship between culture and resistive economy, that resistive economy is not a sole consumer and resists against objectives of rule economy. The economy tries to change available economic structures and to localize them based on its own ideology with an active approach toward resisting against definitions, structures and products of ruling economies. Every community bases upon three main principles: culture, politics and
economy. The three principles strengthen each other and culture is the most important among all. Basically, economy takes its values and directions from its prior culture. Therefore, the economy is not resistive unless the culture is and there is a longitudinal relationship between the two components (Bazkhane et al, 2013).

6. FINDINGS, DISCUSSION AND CONCLUSION

Culture is a main field in economy and, mutually, economy plays an important role in progress of culture in various social levels. Respecting definitions and principles of resistive economy and ideas of Iran's respected leader, this kind of economy is a basis for "school of Islamic economy" and other bases include "economic justice", "livelihood contrive" and "economic reasonability". The principles together are called "culture of economy". Marx recognizes economic system as the determinant of cultural characteristics. Emphasizing necessity of economics he argues that the economic system determines a society's cultural and economic features (Mohajer, 2011).

Specific stable economic behaviors originate from specific cultures. Besides, economic development is a certain status of economy very certain status is a result of specific behaviors (Roozbahani, 2008). Respect to religious idealism plays the main role in this economy culture. Thus, spirituality originating from religious lessons is a key factor in living style (Peyghami, 2012).

Markets of different countries are influenced by a variety of factors one of the most important of which is culture. Advance of a successful international market depends highly upon understanding and recognizing differences between various countries and their different cultures. Culture is a complicated whole and involves knowledge, beliefs, art, morale, traditions and every capability and habit of members of a society influencing individual consuming behavior. Complicated whole means that culture is a system with interdependent components and this makes it difficult to identify it. Social and cultural factors affect all aspects of consumer and purchaser's behavior and the global variety of these factors is of considerable significance for most companies in their planning and implementing marketing strategies. Difference in languages change the mean of an advertisement and difference in cultural structure may cause an item meet needs of various levels of that society. In a certain culture, a sewing machine may be considered as an entertaining device but a necessary one for survival of a family in another.

In fact, presence of ideologies, whishes, identities and determinations capable of coming to practice is a main requirement of development and progress in all fields. This national self confidence and self-esteem is the key to development and progress of our country and is defined and embedded in the field of culture. Hence, cultural beliefs and orientations should change to provide for manifestation of material effects of civilization such as extension of science and economy. One of the main approaches of resistive economy is to be both endogenous and exogenous to which Iran's leader has frequently pointed. Endogenous resistive economy may reinforce domestic production and affect saturation of local capacities whereas the exogenous version enables presence in international markets. Endogeneity results from Iranian thinking, Iranian science and technology, Iranian entrepreneurship and Iranian raw material. This approach results in extraversion thinking to exchange services and experiences with other countries. According Hofsted's model (2006) and research of Moni (1998), Braily and Acher (2006) it can be said that there is a direct relationship between social culture and marketing. In other words, success of international marketing depends highly on consistency of marketing decisions with cultural measures and the measures are considered as criteria to accept or deny marketing.

The model below is an aggregate of what discussed above.
Followings are suggestions to succeed in global competitions:

- Investigating and identifying destructive and constraining legal, social and cultural factors affecting presence in international markets;
- Providing organizational procedures and structures in business of managers with various cultures;
- Making managers familiar with culture and its advantages in global competition;
- Having a proper performance to succeed in the most important markets of the world (North America, Europe and Asia);
- Producing and supplying new products;
- Replacing country or region-based profit centers with production line-based ones;
- Using the so called "local – global" strategy based on terms used by Japanese researchers. This means making decisions on products, capitals and research on a global basis, yet, enabling local units to make required decisions on packing, marketing and advertisement;
- Selfishness must be removed. It is necessary to train individuals capable of thinking on a global and international basis. They must be sent abroad and equipped with the most advanced communication systems;
- Foreign employees must be allowed to be place on higher management levels;
- The best should be done according to situation. It is even possible to change primary and important managers;
- Coalition must be formed when it is not possible to enter markets lonely.
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Study the Role of the University and its Elements in Realizing Resistive Economy

Mahdi Amiri\textsuperscript{28}, Akbar Partabian\textsuperscript{29}, Mahmoud Safari\textsuperscript{30}

\textbf{ABSTRACT:} University as the center of thought and science production is the most important center for formation of policies used to promote the country by our great leader Ayattolah Khamenei. Determining the concept of policies, thought processing, content and discourse issues are the items that can be considered in University to implement these policies. One of the concepts referred by our leader is resistive economy and it is one of the most important solutions to cope with economic attacks of enemy and sanctions and turning the country to a resistive and developed country in economic field. With the aim of illustrating Supreme Leader’s remarks on Resistive Economy in five years, the study reviews the role of academy and its components in the realization of the Resistive Economy. The study is a qualitative study in which analytic-descriptive as well as documentary methods were used to collect necessary data. The most important results of the study indicated the role of four-fold elements, i.e. professors by holding up “free talk seat” and developing theories about the Resistive Economy, students by conducting applied research with the Resistive Economy Approach, syllabus content through revising topics of university courses, and student organizations through explaining the discourse of the Resistive Economy and efficient management of financial resources, in realizing the Supreme Leader’s remarks. The main question of the study is what is the role of lecturers, students, textbooks, student formations and optimal consumption management of financial and materialistic resources to fulfill the goals of our leader?

\textbf{KEYWORDS:} University, Resistive Economics, Academic Sections.

\textsuperscript{28} Faculty Member, Department of Education, Payam Noor University, I.R, Danesh Road, Lamerd District, Fars State, Iran, P.O. Box 19395-3697, Tehran.; mail: mahdiamiri10@gmail.com

\textsuperscript{29} MA Educational Research PNU Branch Lamerd, lamerd Center, Iran.; email:akbar.partabian@yahoo.com

\textsuperscript{30} Graduate student Industrial Engineering PNU Branch Lamerd, lamerd Center, Iran.
1. INTRODUCTION

Resistive economy is a considered concept that seeks to retrofit, remove the crisis and restore the structures and institutions of the economic that definitely, belief and public participation and applies of rational and prudent managements, are precondition and requirement of this subject. Resistive economy is reducing the dependence and is an emphasis on internal manufacturing profits and is an attempt for self-reliance.

As economy literature suggests, the protective economy term was mostly used to protect economy, and particularly domestic production (Arabnejad, 2012:102) but the nearest concept to Resistive economy is “economic resilience” which used by Briguglio (2006) to refer to potency of policy build an economy for improving the adverse effects of exogenous shocks. He argues that the resilience economic have two concepts: First, the ability of the economy to recover quickly from the external destroying economic shocks. Second, the ability of the economy to resist in front of the effects of these shocks (Saif, 2012: 7).

In Iran the expression of Resistive economy was first used by the supreme country leader in meeting a group of country entrepreneurs in 2010 and after that it was also highlighted in several presentations by him. (Ferdowsi University of Mashhad, 2014:1). The supreme leader in defining the Resistive economy says:“it means that we have a kind of economy that the process of economic growth is protected and the vulnerability of it is reduced. Resistive economy has two characteristics based on the leader perspective

1: It is resistant against enemy threats and will be less damaged 2: Turn threats to opportunities and grows even in threaten time (leader remarks in the meeting with the president and members of the Cabinet 24/08/2012). Ayatollah Khamenei the supreme leader of the Islamic Revolution stressed on notification of general policies of "Resistive economy" that is based on the first paragraph of Article 110 of the constitution and after consultation with the Expediency Council. "Following the scientific and indigenous pattern emerged from revolution and Islamic culture will be element of defeat and retreat of the enemy during the economic civil war against Iran nation and also the Resistive economy will put objectivity to an inspiring model of Islam economic system in increasing international crises and will provide the area and appropriate chance for entrepreneur of people and economic activists in Realization of Economic Saga " (The Text of notification of general policies of the Resistive economy, 18/02/2014).

Giving opportunity to university elites in the fields of industry, commerce and agriculture is one of the features of resistive economy and the situation should be like that elites, researchers and faculties not only will not face any obstacle during their efforts but also provide the areas of realization for converting commercialization of scientific achievements. All people and different segments of society have constructive role in the implementation of resistive economics policies and the role of academics and educational zone is greater in this field. In recent years we have seen the publication of research papers in foreign magazines and journals. In a way that according to authorities, our country in terms of Ranking of knowledge is 16th in the world ranking and the first in the region in 201431. but don’t you think that science creating without turning it into operational plans, leading to create a phenomenon known as “escape of ideas”? It means that unfortunately, a case will be studied for many years in a country, but without trying to resolve barriers of conversion of these ideas to operational plans inside of the country, they will be easily accessible for other countries too. One of the roles of university is creating of science and commercialization of it that is the missing link in our country and in this field the relation of industry with university should be increased. So the basic issue is that the circumstances inside the country must be in a way that the cycle of science creating is done within the internal borders of country and this could be a way to pass the economic crisis and sanctions by academic and scientific researchers of country. Accordingly, given the importance and necessity of explaining the Resistive economy aspects and the discourse of them, especially in the academic environment, educational and their conversion to inclusive and common national dialogue that is one of the university tasks and centers of higher educational system. In following we will investigate the role of

universities and higher educational systems in general and the role of each foundation and its elements in particular.

2. THEORETICAL FOUNDATIONS AND LITERATURE REVIEW

Resistive economy is not an economic austerity, but is a Dynamic economy that will be based on knowledge. Certainly academics have spent their precious years learning daily sciences and different strategies of solving problems and of course due to living in Iranian society and believing in the Islamic system and readiness to sacrifice in its gaining great wishes have the more possibility of influence and role creation in this area and can shine very well (Mansour, 2012). Universities should personalize this perspective in society that resistive economy is not austerity economic, but also follows the personal and social welfare of life. The trust of university to society Causes, not only universities in the form of resistive economy follow applying this idea but also use their capacity to confirm people to follow this plan (human science site32).

Perhaps the most significant aspect of the role of the universities in realizing the resistive economy is the influence of its culture among society population. So in order to increase the influence of each idea including the idea of resistive economy in society, cultural theorizing and institutionalizing must be started from inside of university and scientific and intellectual environments. Universities by using the followings can have a key role in realizing the resistive economy:

1. The university through the activation of science and technology parks and establishing of knowledge based companies in order to develop Entrepreneurship leads to the realization of resistive economics (Gholami, 2012). Knowledge based companies as economy enterprises have a central role in the structure of this economy. According to article A of Support knowledge-based activities of companies: knowledge based companies and institutes are private or cooperative companies with the goals of synergizing the science and wealth, developing knowledge based economy, realizing scientific and economic purposes (including the development and application of invention and innovation) and commercialization of research results (including design and production of goods and services) in the field of high technology and with abundant value added tax especially in the production of related software (Jabari pour, 2014). Therefore the setting up of science and technology parks and knowledge based companies in universities are necessary.

2. The university by entering into discussions of resistive economy with educational concepts and culture building plays a key role in this case. Generally, academic strategies enter to decision making organs and then administrative organs. It means that the best place for discussing and theorizing ideas are universities. Therefore one of the components of the process of theorizing resistive economy is the university study of global crisis.

3. Setting up the courses related to regional needs in university is also one of the key strategies in realizing resistive economy because it leads to economic, scientific and technology self-sufficiency in this field.

4. increasing of PhD courses are also consistent with the previous purpose of basic strategies in realizing resistive economy.

5. Undoubtedly one of the major challenges in realizing the Resistive economics at the University is facilities that are in the corner of the barn universities and any use of them is not for many years.

According to this, five fundamental questions are raised and explored:

1. What is the role of professors in realizing the Resistive Economy?

2. What duties do students have to make the Resistive Economy realized?

32 .http://www.ensani.ir
3. What form do syllabus contents and programs should follow in accordance with the Resistive Economy?

4. What is the role of student association and organizations in achieving the Resistive Economy?

5. In what way can the efficient management of financial and material resources make a contribution to the realization of the Resistive Economy?

Figure 1. A conceptual model. Factors affecting academic achievement of resistive economy

Shahabadi and Bahari (2014) compared Iran with China in terms of a knowledge-based economy point of view in order to confront economic sanctions, concluding that China’s contribution to the knowledge-based development economy has grown under adverse circumstances during 1980-2009, and Iran can take advantage of the pattern in an attempt to circumvent sanctions.

In a study into the resistive economy and its requirements with an emphasis on the Supreme Leader’s vantage point, Mirmoezi (2012) found that his view is a special form of Islamic economic system, which arises in an economic threat situation attempting to overthrow a system as a result of changing the priorities of economic goals as well as undergoing relevant changes in strategic principles and overall policies of the system.

In a study into the relationship of the Resistive Economy to entrepreneurial tendency and knowledge management among entrepreneurs of the Industrial County, Mohammadi Moqadam et al. (2013) found that there is a positive on his point of view.

Gholami (2012) also has achieved significant relationship between the Resistive Economy, entrepreneurial tendency and knowledge management. According to this, governmental organizations were bound to utilize tools such as knowledge management as a platform for entrepreneurial tendency encouragement in order to avoid delay in service delivery and customer dissatisfaction, as well as holding on to the aspects of Resistive Economy. Torabzadeh Jahrumi et al (2013), in a study into the aspects and components of Islamic Republic of Iran’s Resistive Economy as proposed by the Supreme Leader, could derive the aspects and features of Resistive Economy based studied the role of universities in the realization of the Resistive Economy.

The Deputy of Budget and Planning (2014), Ferdowsi University of Mashhad, Tirgar et al (2013), Sarafrazi (2013), and Milimonfared (2013) separately studied the Resistive Economy and the role of universities and its professors in realizing it.

Additionally, Alamati (2013), in a study on the role of education system in the development of the Resistive Economy, stated that the education system of the country should educate our children, teenagers, and youths with respect to the contemporary requirements and circumstances, i.e. rear children to be creative, Jihadist, and diligent.
Pilehvar and Shukri (2013) studied the relationship of the role of human capital in economy to the emphasis on the role of health and education and Concluded that there was a significant and positive relationship between the variables of health, labor productivity and percentage of productive capacity with the per capita income in the short & long terms. Also concluded that the impact of distributed education on per capita income and economic growth is negative respectively.

Loderman and Malouni (2007), in a study by title Product innovation by incumbent firms in developing economies: the roles of research and development expenditures, trade policy and the investment climate on 126 countries during 1975-2000, came to the conclusion that research and development have a positive effect on the economic growth of the countries.

Chen & Dahlman (2004), assess the effects of knowledge on economic growth. By using an array of indicators, each of which represents an aspect of knowledge, as independent variables in cross-section regressions that span 92 countries for the period 1960 to 2000, they show that knowledge is a significant determinant of long-term economic growth. In particular, the authors find that the stock of human capital, the level of domestic innovation and technological adaptation, and the level of information and communications technologies (ICT) infrastructure all exert statistically significant positive effects on long-term economic growth.

Ako and Damont (2008), in a study on the relationship between human capital (education and health) and economic growth from 1929 through 1997 in the united states, arriving at the conclusion that there is a significant relationship between them(Quoted from Pilehvar & Shokri, 2013: 84).

3. RESEARCH METHODOLOGY

The study is a qualitative study in which analytic-descriptive and documentary methods were used; that is to say, after determining the five-fold elements of university system influencing the Resistive Economy, we studied how each of the elements influence the realization of the Resistive Economy using available written and electronic resources.

4. RESEARCH FINDINGS

4.1. What Is The Role Of Professors In Realizing The Resistive Economy?

The Part of the university knowledge that is taught and the person who is responsible for providing curriculums has the essential role in this regard. Because teachers are their student’s models and they are the most critical factor in creating favorable position to developing educational goals. The teacher can compensate textbooks fault and lack of educational facilities and vice versa, he can change the best position and teaching subject to the inability in creating a desired emotional connection to an inactive and boring environment (Shabani, 2004: 117).teaching method and the influence of teacher to the students plays a key role in their mental health. This influence may be happened directly or indirectly into various forms, such as imitation, modeling and simulations. The students accept the most influence from their teacher, so the faculties have the essential and key role in society in making believe in realizing spirit of resistance among families (Amini, 2014).

one of the duties of teachers and academic elites is holding free thinking seats and theorizing about resistive economy with the purpose of discourse and clarifying aspects of resistive economy. Tirgar and his colleagues (2013) have concluded in a research that faculty members in face of resistive economy feel responsibility and announce their willingness to participate in holding workshops about resistive economy subject.

Other duties of faculties are leading to university scientific-research activities and student research papers in order to overcome the country problems and fundamental issues related to sustainable development. So that the academics are expected to be pioneered in realizing the resistive economy that is based on knowledge and technology because paradigm and fundamental human assumptions are merely in potencies of
universities and science creating institutes. Also, new approaches based on sustainable education should particularly pay attention to interdisciplinary and holistic learning, critical thinking, participatory decision making, using of appropriate local information and using of new methods (Mili Monfared, 2013).

4.2. What Duties Do Students Have To Make The Resistive Economy Realized?

The first condition of resistive economy implementation is having resistive spirit and a nation spirit refers to the beliefs of that nation more than anything else. Beliefs of each country are formed inside of the families and in this case students are model for their peers, especially for their families. Therefore, addressing the role of students in promoting the resistive economy culture is necessary and we should not forget to pay attention to such an important topic. The importance of conducting application researches with resistive economy approach can ease the area for fulfilling this case among students especially in periods of graduate studies in university.

As the supreme leader have pointed the other student duties in resistive economy, it is the discoursing of resistive economy concept in society through student organizations and justice movements and gray demands of this concept from officials and practitioners (Base office of supporting and publishing Imam Khamenei’s arts).

4.3. What Form Do Syllabus Contents And Programs Should Follow In Accordance With The Resistive Economy?

Textbook is the most important educational media that is used by teachers and students every day (Altbach, 1991:97). Each student deals with several textbooks weekly while other training media are active around axis of textbooks (Williams, 2001:4).Curricula is the most important training element and the critical issue in curriculums is giving importance to renovation and arranging the concept and teaching methods with changing and unreliable circumstances (Saber, 1974 and quoted from Kosari and Nouroz zade, 2009:5). The content of the curriculum consists of a set of concepts, skills and attitudes that will be chosen and organized by their curriculum planners (Levy, 1991). Content may include knowledge, information, skills, attitudes and values that are required to be learned by the learner for fulfilling desired goals (Khalkhali, 1980).

One of the key strategies in realizing resistive economy is that our education system should act in proportion to resistive economy. Because the function of education system is that brings up adolescents and youth of a country in accordance with the historical circumstances and requirements of that moment (Peyghami, 2012) and undoubtedly a key tool in achieving this is Curriculum of universities and centers of higher education should be arranged in accordance with the resistive economic approach.

Certainly in the current situation and with emphasis of the supreme leader on resistive economy curriculums play their role as a tool for developing entrepreneurship through promotion of skill and creativity in students and to strength Jihad culture. Therefore, it is necessary that the university have plan for amending and modifying headings in order to answer the needs of the community and deliver creative human resources, entrepreneurship and innovation to the community. In this regard it is recommended to start the process of review of university lesson headings from the training groups in university and approving of the required work processes. The needs assessment and establishment of new disciplines that contribute to sustainable development for realizing resistive economy in university are also important.

4.4. What Is The Role Of Student Association And Organizations In Achieving The Resistive Economy?

Student organizations and particularly Jihad groups have the most responsibility in following leadership demands because the main goal of student organizations is arrogance fighting and helping the development of the country (Mofrad, 2014). these organizations can be active in explaining of foundations of resistive

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economy through free thinking seats and ask and answer meetings and also can be active in scientific level through sending academic Caravans in the form of Jihad movements into far and deprive areas for implementation of eradicating poverty, realizing resistive economy and the persuading of justice center economy.

Other duties of these organizations are that one organization should know the resistive economy very well in order to influence on it. They should select one of the main issues according to their criteria and understand it deeper than the media and create constant monitoring and demanding from responsible bodies of related to that issue. They should also provide required platforms for engaging teachers and experts to ensure a good explanation of this issue happen. In other words, the student organizations have two fundamental tasks for realizing resistive economy: the first is the explanation of resistive economy discourse and the second is circulation of constant monitoring and following the demands mentioned by the supreme leader from authorities and relevant institutes (Barati, Undated).

4.5. In What Way Can The Efficient Management Of Financial And Material Resources Make A Contribution To The Realization Of The Resistive Economy?

The principles of divine teachings for healthy Islamic economy state that the issue of moderation in the consumption is mentioned in a few verses (Anam, verse 141; Aeraf, verse 31, Asra, verse 26, Furqan, verse 67) that it is itself the indicating of the position and importance of providing one proper consuming pattern to achieve a healthy economy. In verses and narratives the large part of the economy discussions deals with the method of consumption and reaching to correct and mild pattern of it. Preventing from any extravagance and profligacy is the most important principal in presenting an Islamic consumption pattern which was mentioned in previous verses. If such an event occurs in the sphere of consumption, the economy will become consistent. Thus the in Surah Furqan, verse 67 mentions that moving in an orbit far from extremes (waste and profligacy)is reaching to consistency “Do not be extravagant and not niggardly, but hold a just between those extremes” (Esfandiar, 2014).

The supreme leader believes that the management of consumption is one of the staff of resistive economy. He believes that consumption management means balanced consumption and avoiding of extravagance and profligacy. Government and non-governmental agencies, individuals and families must also consider the fact that this really is Jihad. Today avoidance of extravagance and considering balance in consumption, without doubt is a jihadist movement in front of the enemy, one can claim that is equal to the wage of jihad in Allah's way (Meeting with government officials, 26.05.2012).

As the verses and narrative and the supreme leader statements, achieving to resistive economy has requirements that consumption management is one of its fundamental principles. So universities and higher education institutions should also try to possibly prevent from extravagance and wasting material and financial resources.

5. DISCUSSION AND CONCLUSIONS

The role of academia and education department in the implementation of the policies of the Resistive Economy is prominent. Cultural influence serves as the most reliable aspect of academic function in the realization of the Resistive Economy in a society. Academy consists of various elements, each of which can contribute to the realization of the Resistive Economy. Regarding professors, academic and student elites, as pointed out by Gholami (2012), Mohammadi Moghadam et al. (2013), Milimonfared (2013), Tirgar et al (2013), Sarafrazi (2013), Pilehvar and Shokri (2013), Shahabadi and Bahari (2013), Chen and Dalman (2004), Luderman and Maluni (2007), and Echo and Damunt (2008), we can invoke activities such as free talk seats and theorizing about the Resistive Economy with the aim of making a discourse and illustrating the

\[35\text{-(Forghan, } 67)\text{ and those who, when spending, neither exceed the limits nor act miserly, and stay in moderation between the two).}\]
aspects of the Resistive Economy and guiding research-scientific activities and students’ research papers into the sustainable development related concepts. With respect to syllabus contents consistent with Mohammadi Moqadam et al (2013), Gholami (2012), Tirgar et al. (2013), Sarafrazi (2013), Milimonfared (2013), and Alamati (2013), a revision of organizing the topics of academic courses and higher education courses in line with the Resistive Economy Approach should take priority. Eventually, as for academic management, consistent with Mohamadi-Moqadam et al (2013), Torab-Zadeh Jahrumi et al (2013), Milimonfared (2013), Gholami (2012), we are required to seek the maximum efficiency of available resources and facilities in conjunction with the efficient management of a financial and material resources.

Resistive economy or in another word reducing dependence and emphasis on production benefits and attempt to self-reliance is an approach for reintegrate the economic status of country in the current condition and its clarifying is educators responsibility (Hossein zade bahrini, 2013). Due to the status of national universities and students, they have a key role in the Strategies of resistive economy. The academics are expected to be pioneered in realizing the resistive economy that is based on knowledge and technology and in this sensitive condition of the country around resistive economy strategies based on knowledge and technology, justice, endogenous, dynamic and pioneer they have to be seminar and share their opinions. Formation of research teams comprised of teachers and young students, free from administrative duties spend all their time on research and attempt to resolve the economic problems and offer appropriate solutions in accordance with the resistive economy conditions. At this point, it can act as a major ejection and a big and scientific step for every student and teacher. These spontaneous and dynamic structures can be made in every university and centers of higher education and away from administrative steps try to make practical the order of dear supreme leader of revolution. If we fulfill the role of university elements in realizing of resistive economy as a conceptual model, It can be represented as follows, which consists of four major components, the role of structures, the role of human resources, the role of efficient consumption management of financial and material resources and the role of concepts and curriculums.

Figure 2: The role of the university and its elements in realizing resistive economy
6. PRACTICAL RECOMMENDATIONS

Regarding the role of the universities we can present the following strategies in realizing resistive economy:

1. Formation of research teams comprised of teachers and young students, free from administrative duties spend all their time on research and attempt to resolve the economic problems and offering appropriate solutions in accordance with the resistive economy conditions.

2. Holding of speech meetings, workshops and free thinking seats with resistive economy subject in order to make discourse and explain the aspects of resistive economy.

3. Creating economic committee of resistive economy in centers and units that are associated with industrial and manufacturing centers.

4. Forming of working group of resistive economy with focus on economic faculty in the universities all over the country.

5. Efficient use of existing assets and facilities in departments including laboratory equipment, workshops and equipment and...

6. Reorganization of staffing at the centers and units in order to increase their productivity.

7. Financial transparency in the affairs of the University, especially in development projects.


9. Necessity of doing applied research with resistive economy approach by faculty and students.

10. Activation of all facilities and financial resources and human and scientific capitals of university to develop entrepreneurship through promoting of the skill and creativity of the students as the main approach of realizing the resistive economy.

11. Empowering the workforce through increasing the efficiency and effectiveness of academic education and practical knowledge of students.

12. Strengthen jihad culture in students and academics.

13. Codifying and revising headings and creating new disciplines and interdisciplinary in accordance with resistive economy approach.
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