Business cycles and policy making in social insurance systems the case of Iran (1962-2004)

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Abstract

Social security is not apart from other aspects of growth and development. It is a phenomenon completely coherent to economic growth, social justice, human dignity and national prosperity.
Generally national social security systems in most countries consist of insurance, protection and relief policies. Socio-historical studies reveals that by promoting economic growth and development of middle class, in addition to strengthening civil institutions, the protective function of system would be reduced and adversely the insurance function will be increased.
In principle there is a direct linkage between social security policies and economic growth via improving production capability. Some believe that economic growth will not be achieved properly without extending social security. Such interdependency requires a stable coordination between social security policies and macroeconomic policies so that development of social welfare results in more productive activities and eventually economic efficiency and productivity.
The success and sustainability of a social security fund in long term is highly rely on suitable policy and decision making, and in this regard the macro-economic is one of the most affecting environmental factors or variables on the performance and decision making processes in social security fund. Thus, to adopt proper policies and to be sensitive to external environment of the organization, it is so important to understand the economic boom and slump or in other word the economic cycles.
This paper attempts to measure business cycles of Iran during 1962-2004, by using the Hodrick-Prescott filter. Moreover the relationship between these cycles and some variables of Social Security Organization of Iran – the largest and oldest social insurance organization for workers in private sector- will be analyzed.
Results indicate that stagflation situation in Iran's economy and adjusting minimum wages according to the inflation have caused mismatching between macroeconomic policies and social insurance policies. This situation has led to increase of social insurance burden - the ratio of premium revenues to production of industry and service sectors- and accordingly increase of premium evasion.

Key words: Business cycles, Hodrick - Prescott filter, Social Security, Stagflation, Iran.
JEL: H55, E32, E61

1. Introduction

Economic growth implies promotion of productive capacity overtime which certainly requires increase in natural and human resources, capital factor and technology progress and promotion of management knowledge.

Economic growth in each country practically leads to development of state capability to promote quality and quantity of welfare and social security for several classes of society. Generally within growth theories and its social branch, there is a phenomenon called "Social Security".

Social security is the protection provided against social and economic contingencies resulted from severely decrease of individual income due to sickness, accidents, disability, old age, death and so on.

Recent studies suggest that socio-economic changes and social security system have a close interrelation so that without social justice and social security, achieving the economic growth is impossible. Therefore if economic development means permanent growth within a country's economy and existing welfare state of population rooted from rationale changes in economic needs and promotion of individual welfare state, it may be regarded as results of benefits and assistances of social security in trend of national economy development.

In reality, social security is improvement of economic welfare which targets the human security as the development axis, and through which affect the economic growth and development.

Accordingly, economic growth via improving production capability directly relates to social security policies so that some economists believe that without extending social security to whole population, achieving the economic growth is so difficult.

Consequently the most fundamental and essential solutions to extend social security and welfare services in an economy, particularly in developing countries is implementing suitable policies to reform economic structures and to increase GNP.

Such interdependency requires a stable coordination between social security policies and macroeconomic policies so that development of social welfare results in more productive activities and eventually economic efficiency and productivity.

Failure to establish aforementioned coordination will compromise the financing mechanisms of social insurances and state protection for vulnerable groups and cause financial imbalance furthermore provides social problems and constraints.

It should be mentioned that by providing targeted protections in social security systems, it will be possible to pace effectively in order to improve peace within the active and productive forces and eventually more labor return and productivity.

In the same line with setting such coordination, it is essential to constrain increase of state costs in the social security and welfare which may create imbalance in aggregate demand during the economic boom and to adopt specific policies as protective factors during bust and economic crisis, as a result productivity and return in labor will promote.

Implementing such a policy exactly in order to meet macroeconomic objectives, is not feasible without consideration of business cycles.

In economies like Iran which faces stagflation, adapting social security policies and macro economic policies is so complicated.

Existence of stagflation and wages and pensions adjustment according to inflation tend to raise social insurance burden (the ratio of premium revenues to value added of industry and service sectors), and could followed by increase of premium evasion, premium revenues reduction and continuance of depression trend (Nikoopour 2004).

Therefore decision making on minimum wages setting and pension adjustment, especially during the period of depression in addition to inflation, regarding to sustainability of social insurer funds, is very important.

On the other hand, unemployment fund as a protective instrument of social insurance funds is notably affected by business cycles and considering depth of depression and length of boom or slump period as an economic stabilizing plan in providing unemployment benefits, is significant. Ignoring business cycles particularly in management of unemployment fund, allows unemployment increase and high economic depression within a country.

Thus this article tend to identify and analyze factors which create business cycles in Iran and furthermore it verifies trends of social security fund in relation to contribution revenues, unemployment insurance, voluntary and self employed insured and investment policies.

2. General overview of the social security organization of Iran

The Iranian Constitution mandates the government to protect all elderly; Iran has thus developed an extensive pension system that is composed of contributory and non-contributory schemes, which together cover 50 percent of the labor force and close to 60 percent of the elderly population. Contributory systems are defined-benefit with pay-as-you-go financing. The Social Security Organization (SSO) is the largest fund, mainly

covering workers in the formal private sector and workers retaining government contracts. It currently has 6 million contributors and 1.14 million individuals receiving old-age, disability, or survivor pensions.

The Social Security Organization was established in I952 to provide pensions, unemployment insurance, and health insurance to workers in the private sector-including the self-employed and voluntary contributors-and to contractual workers from the public sector. The SSO is an autonomous institution attached to the Ministry of social security and welfare. Today the binding law for the institution is the 1975 Social Security Law, which has been amended several times since 1994.

The SSO provides a wide array of benefits that can be grouped into three categories: cash assistance and compensation, pensions, and health services. Cash assistance and compensation include maternity, sickness, and family allowances; grants for marriage and for funeral expenses; lump-sum transfers for physical disability; and unemployment benefits.16 Pension benefits include old-age, disability, and survivor pensions. In addition, the SSO offers outpatient and inpatient health services for the insured and the family of the insured. Today there are close to 1.2 million pensioners in the SSO receiving pension payments equivalent to 5,875 billion. Sixty percent of these expenditures are related to old-age pensions, 33 percent to survivor pensions, and only 7 percent to disability.

The system offers high replacement rates across all income levels. Take the case of individuals who enter the system today and contribute for 30 years. If current minimum pensions and ceilings on contributions are assumed to be constant in real terms, then the majority of individuals, regardless of their income, would receive a replacement rate of 100 percent.

Investments policies

The SSO investment policy is in principle proposed by the High Council of the SSO and executed by the Managing Director of the SSO in coordination with its Board of Directors. The High Council is responsible for setting the general framework of the investment policy (e.g., limits of investment risks, classes of assets where the SSO can invest) and for defining the annual operations budget. Investment policies need to take into consideration the SSO's triple mandate: i) to provide health, unemployment, and pension benefits to its members; ii) to support social development e.g. through

investments in housing; and iii) to support economic development e.g., through the financial support of national projects. The Managing Director and the Board of Directors execute these policies through the Deputy of Economic and Investment Affairs of the SSO and the managers of the different companies directly owned by the SSO-including the Social Security Investment Company (Shasta).

The Social Security Investment Company (Shasta or SSIC) was created in I984 to manage the Social Security Organization's investments in the productive sector.

Shasta's mandate is to maintain and increase the value of the SSO funds through: (i) investments in industrial, commercial, and mining sectors that impact economic development and yield a reasonable rate of return; (ii) Short and medium-term investments in manufacturing firms, such as those registered with the Teheran Stock Exchange; and (iii) management of industrial, construction, and commercial firms whose shares predominantly are owned by the SSO or Shasta.

The size of the SSO portfolio has been declining as a share of GDP while the structure has changed; giving priority to direct and indirect investments over lending and loans. Up to 1976, the SSO invested its cash reserve fund in the Worker's Welfare Bank in the form of fixed deposits. After the creation of the Social Security Fund in 1976, the SSO started to diversify its investment activities, but by 1989 close to 80 percent of the portfolio still was composed of long-term deposits.

Medical benefits

Current laws: 1975 (social security) and 1986 (self-employed insurance), implemented in 1987. Cash and medical benefits are provided to employed persons in urban areas and old age, disability, or survivor pensioners. Seasonal workers are covered for medical services during the working season. Voluntary coverage for self-employed persons under some determined conditions.

Direct system: Medical care and medicines are provided directly to covered patients through medical facilities belonging to the Social Security Organization.

Indirect system: Medical services are provided through public and private hospitals and clinics, as well as through university hospitals and contracted-out physicians. The cost of inpatient care and outpatient care varies among medical care providers, as do the degree of cost sharing and the rate of reimbursement.

Same as for the insured person, coverage is provided for a wife and for the first three children younger than age 18 (age 20 if a student, disabled, or an unmarried daughter), for a disabled dependent husband older than age 60, and for aged dependent parents. Voluntary insurance can be taken from the Social Security Organization for the fourth and subsequent children.

Medical services are provided directly through 73 hospitals and 270 medical clinics owned by the Social Security Organization.

3. Business cycles concept and definition

There are many definitions of business cycles in economic texts, but all are rather identical. Then this article has paid little focus on this issue. Brenz & Michel (1946) define business cycles as "a kind of fluctuations of macroeconomic activities often organized by business enterprises in a country. A business cycle begins with an economic boom simultaneously occurred in several economic activities, and end to a depression or contraction period. These changes happen repeatedly but not periodically and regularly. Indeed the period of business cycles may vary from 1 to 10 – 12 years. This cycle can not be divided to short cycles".

Dourenboush and others in a similar definition identify business cycles as regular ups and downs in economic activities around the path of economic growth.

Locus also states that business cycles are recurrent deviations in actual Gross Domestic Product in long term.

By definition, business cycles are a kind of periodic and regular fluctuations in economic activity. Of course any fluctuation in economy does not reflect business cycles. Fluctuations may be random and, to a large degrees unpredictable, like occurrence of war in which all economic activities fluctuate irregularly. Definition by Brenz & Michel is a clear examination of main feature of business cycles. There are four important issues in this definition should be considered:

a) These fluctuations are seen in main economic activities which are not only related to national production, but also some variables like employment, prices levels and variables of financial market, are taken into account.

b) Business cycles does not belong to certain sectors of economy or few determined variables, rather prosperity and stagnation during time unit would be happened

simultaneously in many economic activities. This characteristic is called co-movement.

c) The time which a business cycle lasts may vary from 1 to more than 10 years. But a considerable issue is that, once recession begins, economy tends to have a contraction operation and this status lasts one or more years.

d) prosperity and stagnation pattern occurs repeatedly, but does not initiate an alternative pattern. This means that development and intensity of fluctuations are not equal permanently and tail of prosperity and stagnation repeatedly can be seen in economy.

4. Overview of business cycles theories in economic

According to several economic theories, different theories have been introduced in terms of business cycles. Some theories refer to inter-periodical instability or imbalance of fixed investments, and others focus on inaccuracy of adjusting store reserves of investment. Some rely on imbalance of cost-price and high changes in expectations and its effect on return of economic activities and some other emphasize on changes in money and credit supply and demand, and role of nominal and actual rate of return.

Although there are different theories about why business cycles have been initiated, they can be classified into two groups by kind of stimulus: 1) aggregate demand shocks; and 2) supply side shocks.

Demand side shocks shift aggregate demand curve and are initiated from factors such as consumption, investment, government expenditures, and net exports. Demand side shocks may occur unexpectedly in each of the above variables. For example, consumers may decide to save a lower proportion of their income due to young average age of society or myopia. Conversely, supply side shocks may cause economic fluctuations.

When actual business cycles theory was introduced as the last approach in this context, a source of shock in supply side was presented called innovation in technology. So positive technology shock raise the labor force productivity, production will be increased and more production in turn requires more demand for capital goods and labor force.

Once economy faces a negative shock, economy moves toward a contraction path and again similarly regressive sequence repeats.

However there is not a certain consensus that which of aforementioned shocks cause business cycles. A study by Canova (2000) in developed countries classified stimulus into three groups: nominal shocks of demand side (related to monetary variables), actual demand shocks (investment, consumption and etc.), and supply side shocks. Results about causes of business cycles appearance varied in countries.

It has been made special classifications in empirical studies that almost all of them showed co-movement links among countries and to be affected by external factors. It should be pointed out that external part has a crucial role in forming flexibility of fluctuations of open and small economies.

Business cycles formation in analyzing fluctuations of open and small economies requires understanding that source of business cycles in underdeveloped countries may be the result of shocks derived in developed countries. In other word initiation of business cycles in the underdeveloped countries is not completely an endogenous process.

External factors affect open and small economies through two different channels:

a) by changing the trade-off relation with financial and trade parties; and
b) Through events such as oil shocks.

The first is more significant for analyzing business cycles because it is sustainable overtime.

Shocks imposed by financial and trade firms usually extend via two kinds of transfer mechanism in economy: trade channel and financial channel.

Trade channel mostly affiliates to export fluctuation (demand factor) of small countries, while financial channel relates to changes in rate of return (cost factor) expressed from global interest rate.

5. Applied technique

According to Blanchard & Fisher (1989), the most important issues which macro economists face in defining production fluctuations features is distinction of trend from period.

This distinction may be considered precisely statistical rather economic (Hodrick-Prescott, 1986). However, most economists affirm that economy's changes within a given growth path followed by short term fluctuations. This path can be called as "trend". A suitable option to recognize the case may be described that economy is influenced by two

kinds of shocks. Some shocks impose permanent effect on production, called permanent shocks (e.g. productivity revival) and others contain temporary effects which their influences on production disappear overtime (e.g. temporary increase in government expenditures and changes in money supply).

Therefore, trend is that part of production derived from permanent shocks. Structurally these series are non-stationary. On the other hand, those parts of production fluctuations expressed from temporary shocks are related to economic period and are structurally stationary.

In order to obtain business cycles, it is assumed that Iran's annual data about time series of actual GDP, is consist of long term trend component and cyclical fluctuations. To separate these components, the HP filter is utilized in two phases.

First, the long run trend is obtained and second, the cyclical component is exploited of remained. (Farooq Arby, M, 2001)

Trend component may be calculated as below by applying the statistical forecasting method of HP:

$$Min\left\{\sum_{t=1}(y_t - T_t)^2 + \lambda\sum_{t=1}\left[(T_t - T_{t-1}) - (T_{t-1} - T_{t-2})\right]^2\right\} \qquad (1)$$

According to formula, the linear parameter λ controls the smoothing process of trend component where the more linear co-efficient raises, the more studied series smooth.

But determination of exact amount of λ is crucial because by setting inaccurate amount, business cycles will not be measured correctly. Moreover the cyclical component is calculated by differential of production and trend.

As mentioned before, initial problem with this filter is setting the exact amount of λ. In accordance with its innovators, the numerical amount of λ must be selected based on past data and by average length of a complete business cycle (Hodrick- Prescott, 1980). So the primary amount of λ in this paper is determined according to researches performed in Iran up to now and average length of the measured period.

On the basis of some researches performed in Iran, average length of a complete cycle has been calculated between 5 to 8 years. For instance Qataee and Danesh jafari (2002) calculated the average length of depression period as 41 months and average length of prosperity period as 32 months, leading to a complete business cycle equal 6 years. Some

other researches also have obtained similar results. Thus the primary proposed amount of average length of period is determined 6 years.

Many studies have been done on the issue of statistical characteristics of aforementioned Filter; the most striking is by Moravall & etl (2001) in which the numerical amount of average length of period related to annual, monthly and seasonal data, has been calculated by statistical methods.

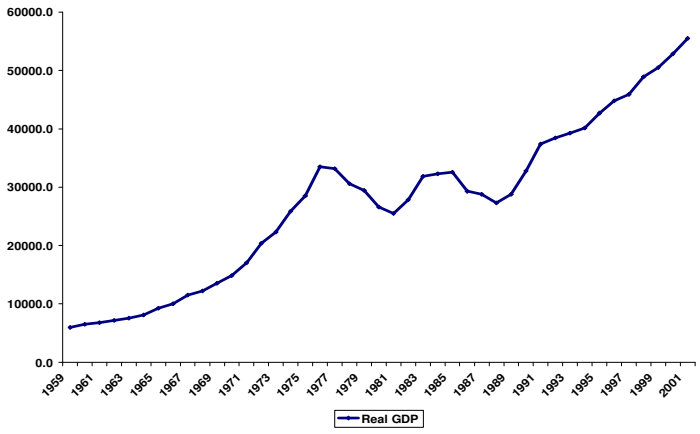
This paper also consider other numbers due to analyzing GDP changes proportionate to different amount of λ. Having determined numerical amount of λ in economic software (Eviews) as 100, this amount is regarded as the primary amount and the number 400 is considered as the next number because researchers have utilized it recurrently.

6. Identifying and measuring business cycles in Iran

Understanding nature of production fluctuations clarifies significant guidelines regarding to why business cycle forms. During past four decades, Iran's actual GDP trend has experienced many ups & downs in which internal and external factors like oil shocks, Islamic revolution and imposed war against Iran had important influences on formation of movement route.

Figure 1 presents time – trend of real GDP during 1962 – 2004. Referring to the graph, there are two breaks due to Islamic revolution (1977 – 1981) and imposed war against Iran (1985 – 1988). GDP has been negative during these times.

Figure (1): Real GDP



Generally positive amount of growth rate is important because based on NBER[1] definition, negative growth of real GDP for at least two consecutive seasons means a depression period.

Since seasonal information about GDP was not available, negative growth for one year is considered as depression period. Therefore when negative growth of real GDP reduces comparing to previous period, it is regarded as a depression period.

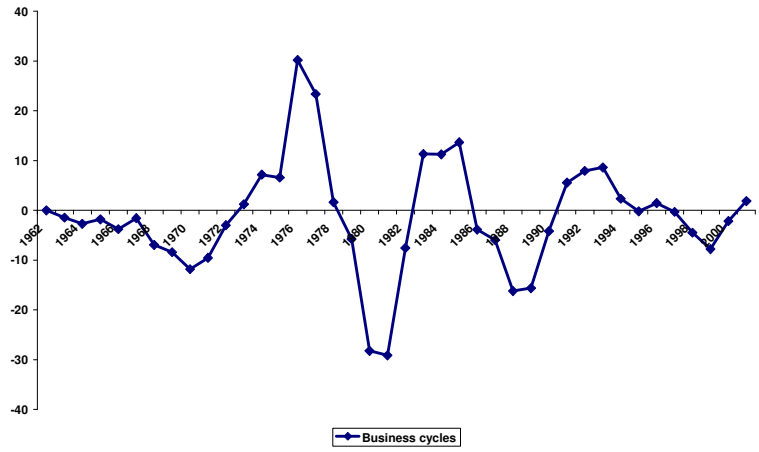
By these explanations, it can be stated that Iran has experienced two periods characterizing GDP reductions, first during 1977 – 1981 due to revolution occurrence up to beginning of imposed war and second between 1985 to 1988 i.e. final years of imposed war.

It must be mentioned that this definition involves its specific implications. For instance when a country's real GDP assumes growth rate equal -5, 0.001 and -6 percent during 3 consecutive seasons, it means a depression period while based on this definition it's not regarded as depression period.

In order to distinct trend from cyclical component, this paper attempt to apply the statistical filters HP by which it obtains time series elements. In this case the given time series is detrended. Then the business cycle component would be derived from differential of time series and obtained trend component.

As shown in figure 2, business cycles have been measured by using HP filter:

Figure(2): Business Cycles of Iran



[1] - Notional Bureau of Economic Research

For the purpose to recognize period and its length in business cycles, identifying turning points is so important. There exist relative maximum and minimum points within movement route. As indicated in above figure there are at least 6 periods and maximum 7 business cycles based on peak and trough points.

Considering trough points, first cycles begins from years before 1962 and continues up to 1964. The second cycle starts in 1964 and continues until 1970. Next one occurs in 1970 and ends in 1975. The latter cycles i.e. periods between 1975 to 1981 and 1981 to 1988 are terms in which Iran's economy has experienced the most fluctuations and the deepest depression periods. Next cycle starts in 1988 and extends till 1995. The last cycle forms in 1995 and ends in 1999. Next cycle is still on the initial years.

By this method the length of each period from one trough to next one aligning to trend route in long term is called a complete business cycle. But considering a business cycle as the distance between two peaks leads to 6 business cycles that the seventh period is at the end of stage. It would be expected that there is not a regular pattern regarding to movement amplitude and depth of peak and trough points. For example two periods i.e. years between 1981 to 1988 and 1975 to 1981 are the longest and deepest periods.

Table.1 indicates that the average cyclical period in case of interval between two peaks is 6.2 years and in case interval between two troughs is 6 years. For the first one, the longest period is 9 years and the shortest period is 4 years. Intervals length between two troughs is almost similar and the longest and shortest periods are 8 and 4 years alternatively.

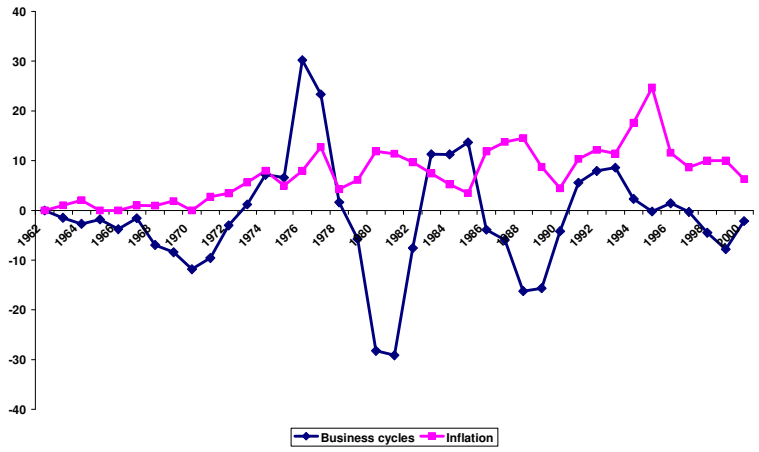
Table (1): Extension and Length of Business Cycles

Peak points	Interval between two peaks	Trough points	Interval between two troughs
1960	**7**	**1964**	**6**
1967	**7**	**1970**	**5**
1972	**4**	**1975**	**6**
1976	**9**	**1980**	**8**
1985	**8**	**1988**	**7**
1993	**4**	**1985**	**4**
1997	----	**1999**	----

7. Stagflation in Iran's economy

As shown in figure 3, there is an adverse relation between inflation rate and business cycles in Iran meaningfully. This is the case in some developing countries such as Mexico, Turkey and Costa Rica.

Figure (3): Stagflation in Iran's Economy



Stagflation[1] is thought a situation when wages costs remain high due to legal regulations, social insurance and trade unions pressures, investment may be stopped or face with high depression, interest rate and money costs stay at high level because coupled with productive market, money and goods speculation promotes and such fact prevents reduction in interest rate. This is while people need to consume goods and sufficient goods exist but transactions are not at favorable level. Indeed as a result of expensiveness, people cannot afford to pay costs of their immediate goods.

Consequently goods are pilled up in warehouses and gradually are ruined, while the internal market cannot attract them and foreign markets intend not to purchase them because of low quality and high prices.

Figure 3 shows that once Iran's economy enters depression phase, inflation rate rises. Having direct relation to oil export revenues, it seems that inflation in Iran is derived from shift of aggregate supply curve or in other word is resulted from cost burden.

[1] - Stagflation [stag (nation) + (in) flation] is a term in macroeconomics used to describe a period characteristic of high inflation combined with economic stagnation, unemployment, or economic recession.

Such conclusion is so important for policy makers to adopt proper economic policies during recession otherwise assuming improper expansionary policies will surely intensify national inflation. This situation occurred extensively in 1995 in Iran similar to UK.

Adopting improper expansive policies during 1993 to 1995 led to a unique inflation rate equal 49 percent.

Of the most affecting factors on production cost and shift supply curve which are creating factors of Iran's inflation is wage costs or social insurance contributions.

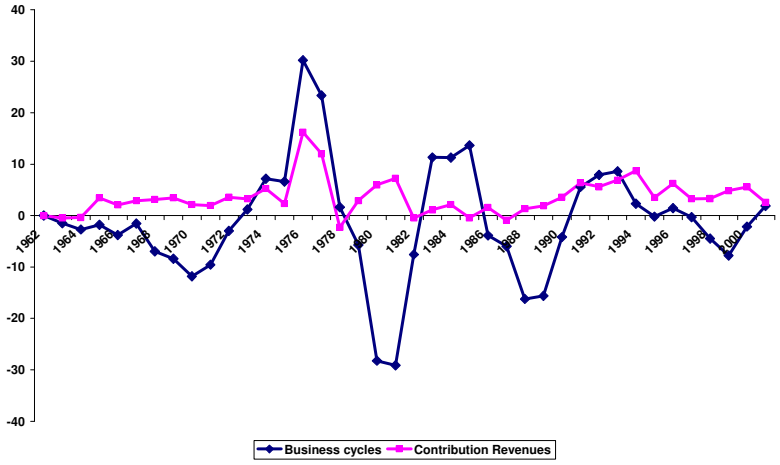
Within an economy faced with stagflation phenomenon, setting the covered wage (part of wage of which contribution is deducted) is so significant. Although determination of the share of social security costs requires more studies out of this paper coverage, according to researches performed in Iran it can be assumed that options to confront with stagflation generally include limiting government economy activity, capitalization to industries and utilizing new labors despite of inflation and investment on labor-intensive industries, attracting foreign capitals, developing non-oil exports, considering micro industries, finalizing all incomplete development projects and implementation of the Quality Management.

8. Business cycles and Revenues periods of Social Security Organization

By law, social security organization (Fund) is financed through revenues from contributions and investments and incomes from fines and rewards. Contribution revenues consist of 85 percent of SSO incomes.

This section is prone to compare contribution revenues and national business cycles during 1962- 2004. As shown in figure 4, because of existing stagflation and adjusting minimum wages according to inflation, there can be observed a disharmony between contribution revenues growth and country's economic situation during 1979-81, 1988-1990 and 1998-2000.

Figure (4): Business Cycles and Contribution Revenues Growth

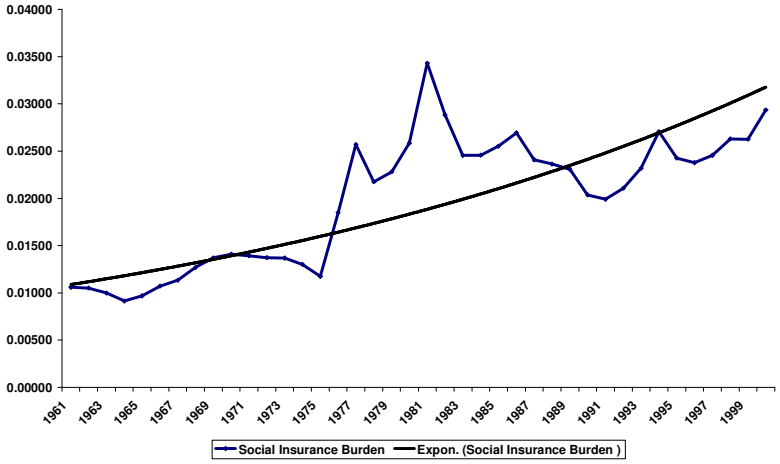


It should be mentioned that SSO's most contribution revenues is through economic groups of industry, mines and services. Once economy enters recession phase, added value of these sectors would decline, and considering growth of contribution incomes due to adjusting wages according to inflation rate, surely social insurance burden (ratio of contribution revenues to industry & service sectors production) will increase.

This eventually leads to increase of contribution evasion and accordingly decrease of confidence to performance of social security system.

Figure 5 suggests that during the study term, insurance burden has had a constant ascending trend.

Figure (5): Social Insurance Burden



Contribution revenue is a function of contribution rate, number of contributors and minimum wages. These variables had many changes and fluctuations over the study term. Nevertheless this paper emphasizes on the trend of minimum wage growth.

Figure 6 shows relation between minimum wage growth rate and business cycles. In the years 1975, 1979 and 1991, Minimum wages have been increased by 26,170 and 66.7 percent respectively, while inflation rate grew at 10, 12 and 20.7 percent respectively.

During the study term (1962 – 2001), the inflation rate on average represented 14.5 percent and growth rate of minimum wages was approximately 19.2 percent.

Hence it is clear that growth rate of minimum wages is higher than the inflation rate. This fact accompanied with the existing stagflation situation in country has had the insurance burden increases. For instance in 1978, the country's economy faced with a recession situation caused by Islamic revolution but since political discretions have had priority to economy decisions, it can be observed a growth equal 170 % in minimum wages.

Figure(6): Business Cycles and Growth Rate of Minimum Wages

Since 1997, the social security organization has implemented the lump sum wage measure. As stated before, increase of covered wages within a stagflation situation results in evasion rise. Therefore it's proposed that in setting the lump sum wages, the country's economy context and returns of different economic sectors, would be taken in to account. This provides sustainability of the fund in long run.

While increase of insurance burden and mismatching of contribution revenues with recession situation might be referred to low flexibility of labor law, yet by establishing the unemployment insurance fund, this problem was not resolved in 1998 and 2000.

9. Business Cycles and Unemployment Insurance Fund

Unemployment insurance is one of the most modern types of social insurances designed in social security systems. Certainly despite of other risks affiliated to social security branches which are environmental, unemployment is an economic risk. History of unemployment insurance protections in Iran goes back to the 1946 when the cooperative fund was established to provide marriage, family, unemployment and etc. allowances.

Having frozen the unemployment insurance in the approved law of 1975, finally in 1987 as a result of unemployment growth due to enterprises being closed, implications from incidence of war and dominant depression in country and etc. unemployed protection became officials' concern. Thereafter trial unemployment insurance law was implemented for 3 years and in 1990 the permanent law was approved with some amendments.

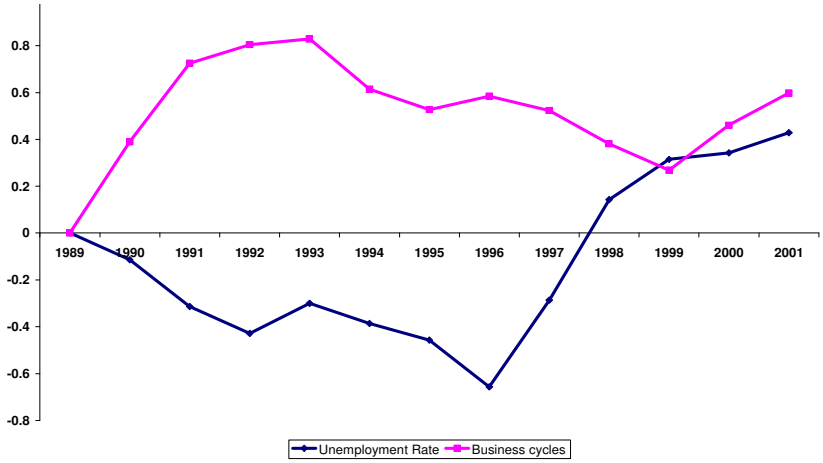
Principally, unemployment in macro levels consists of different forms; the most important ones are unemployment due to dynamic changes in production (gradual evolution of industry), structural unemployment, unemployment resulted from international economic crises, hidden unemployment (underground employment), seasonal unemployment and finally unemployment derived from long term and short term depression in macro and micro levels.

It's evident that targeted and efficient reaction to the issue, considering the form, quality, reasons and factors creating unemployment, requires certain policies & measures.

According to the related law, the objectives of establishing unemployment insurance are to protect insured that have been unemployed unwittingly, to promote skill levels and to prepare jobless insured to obtain decent jobs and eventually to remove problems and temporary crisis related to employers and consequently to provide opportunity for them to improve economy and financial implications in order to preserve economy power and viability of enterprises. The last one exactly refers to booms and busts occurred in an economy.

Figure 7 implies the relation between business cycles and unemployment rate. It obviously indicates that recession periods are accompanied with unemployment rate growth so that during the depression periods, inflows of unemployment fund increases. Figure 8 also reveals that as a result of some abuses of unemployment fund finances, this fund has not functioned properly during the depression periods and its third objective has not been met.

Figure (7): Business Cycles and Unemployment Rate



Of reasons creating this situation can be mentioned as allocation of finances of unemployment fund to finance privatization implications, to revive industry, developing textile industry and typical approach to the seasonal workers and existing duality of governance in SSO and ministry of labor and social affairs.

Figure (8): Business Cycles and Inflows of Unemployment Fund

Essentially in unemployment literature, it is recommended governing bodies and policy makers to anticipate business cycles and to arrange reserves so that is enough for depression periods.

Hence, considering business cycles and periodical fluctuations of employment, the unemployment contribution rate should be established so that incomes will be adequate to meet expenditures on benefits and administration. In this regard it is proposed that during booms, surplus reserves would be invested in high return portfolios depending to country's financial markets conditions (money, capital and confidence) until during busts and high unemployment rates, the fund can afford to meet its expenditures. Clearly immediate liquidity has priority.

Ignoring business cycles and utilizing unemployment fund reserves as a stabilizing instrument for economy have weakened the fund's efficiency and performance, and have caused the expenditures exceed Revenues. By law, when the fund faces with deficit, government is obliged to offset.

10. Business Cycles and Investments of Social Security Organization

According to articles 52 & 53 of social security law, SSO must invest its surplus reserves. Mission of SSO in this context is to preserve and promote contributors' reserves.

Sustainability of social security fund in long term is highly depend on appropriate designing of a proper investment policy and this reflects the investment nature, strategic objectives and reserves management.

Incidence of some internal and external problems as shallow financial markets, instable law and regulations and political discretions prior to economic profits, weak controls and supervision over invested reserves and finally lack of quantitative and strategic analysis about how surpluses to be allocated, has put the SSO in trouble for good reserve management.

Investment section during more than half century of SSO longevity has experienced many changes because of dominant economy environment. Thus it would be helpful for SSO's officials in charge of economic fields to recognize macro economic environment and prosperity and depression periods, in order to design and set out investment policies.

It is often recommended during depression periods, investment expenditures would be raised and during prosperity, the resulted added value will be utilized. Figure 9 represents

interrelation of country's business cycles and volume of transactions in stock market. Figure 10 also implies relationship between investment expenditures and country's business cycles.

Figure (9): Business Cycles and Transaction Stock Market

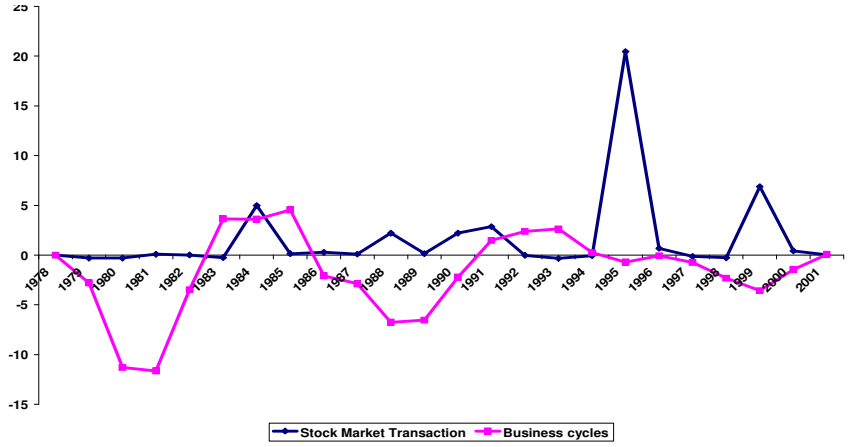
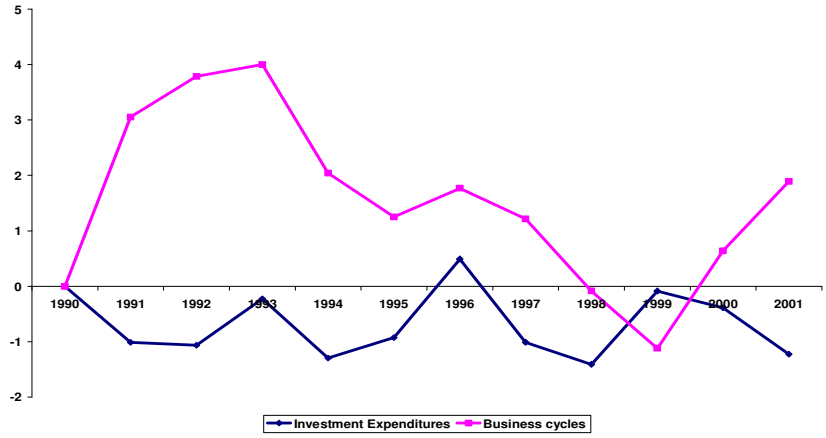


Figure (10): Business Cycles and SSO's Investment Expenditures



Based on figure 9, there can be seen a significant growth in volume of transactions of stock market during depression years of 1995 and 1999. As it's noted, existing imbalance in investment - savings causes business cycles in an economy. According to Nili and Dargahi (1998), development of national savings out of promoting participation of

private section aimed to finance investments, is one of the strategies to control fluctuations and to achieve economic growth.

Therefore SSO aligning with its mission i.e. providing sufficient protections based on individual savings accumulated and by emphasizing on its reserves, can play a crucial role in financial markets and control adverse effects of economic fluctuations.

11. Business cycles & extension of insurance coverage

Having promoted informal employment and changes of structure of occupation toward self-employment and micro industry development, the insurer organizations have tended to establish and promote voluntary insurances aiming to preserves their sustainability.

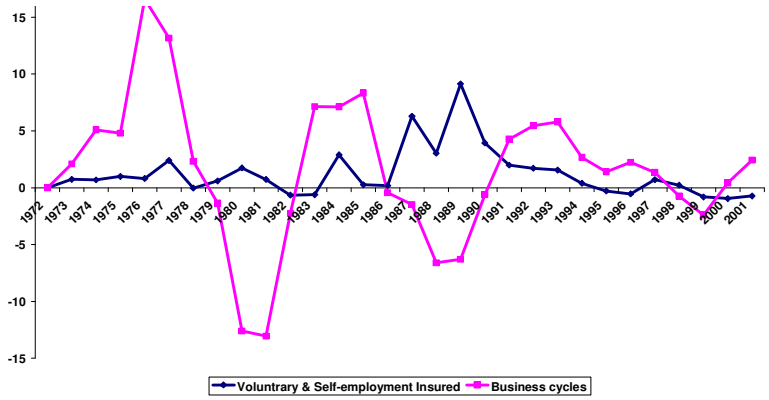
In this regard, in 1962 Iran acknowledged the issue and first bylaw on voluntary insurance for self employed was ratifying. Thereafter in 1966 domestic workers, self employers and owners of enterprises, employees of non-governmental organs and other workers without insurance coverage were covered by social security scheme. They should pay 9% contribution on the basis of lump sum salary determined for their related occupational group for pensions.

This bylaw accompanied to previous one specified for voluntary contributors led to extension of insurance coverage toward self employed and other uncovered workers.

In 1977, contribution rate was set at 30 percent of determined lump sum wages of each occupational group. Consequently as shown in figure 11, the number of self employed and voluntary contributors rose in this year. Of course this increase was because of adding up health services to social security protections and resulted from prosperity dominant in country's economy.

In other word it should be mentioned that social insurer organizations in setting contribution rate and in order to encourage self employed to participate in scheme, must take into account business cycles and during prosperity periods facilitate attraction of finances related to these groups of employees.

Figure (11): Business Cycles and Voluntary and self-employment Insured



In 1987, by ratifying an executive bylaw it was established that all employees without protection coverage and all Iranians including employed or unemployed active labor in abroad must be covered as self employed in SSO. They could benefit pensions if contribute equal 12 % of payroll.

Meanwhile these insured can voluntarily pay 9% of lump sum salary determined for their related occupational group to receive work injury, sickness and maternity benefits. By approving this by-law in 1987 as represented in figure 11, number of contributors (inflows) of fund increased, while during these years the economy experienced depression period.

In 1989, having terminated the imposed war and incidence of economic prosperity, contributors growth rate within the voluntary and owners of occupations scheme raised significantly. In 2001 also some amendments were implemented in voluntary insurance scheme in which the contribution rate for pension benefits fixed at 21 % of payroll and the covered wage set at 1.3 minimum wages by Labor High Council confirmation.

This fact accompanied with gradual increase of vesting period (to 20 years in 2011), resulted in decrease of contributor numbers in this scheme of SSO.

12. Conclusions and recommendations

This paper has intended to analyze some variables of social security organization of Iran during 1962-2004, by using existing information and data and current literature of business cycles. Moreover some recommendations are proposed regarding policy making in social insurance as follows:

- Business cycles of Iran during 1962-2004, have been measured by using the Hodrick-Prescott filter. Results show that business cycles formation in Iran is relatively regular and currently the economy is on the initial years of eighth cycle. Therefore policy makers are able to affect trend of these cycles through policy instruments.
- In Iran's economy on average every 6 years, a complete business cycle containing prosperity and depression periods occurs. Such a finding may be helpful in designing long term strategies and plans for SSO and also in conformity of this fund' policies with business cycles.
- Adverse relationship between inflation rate and business cycles in Iran's economy was proved. In other word Iran's economy faces with stagflation. Adjusting wages according to inflation rate in such environment leads to reduction of SSO's incomes in long term. Hence it is proposed that in order to set lump sum wages, minimum wages would be set and adjusted according to measures rather than inflation rate and stagflation situation would be taken in to account.
- Stagflation situation and minimum wage adjustment s according to inflation rate increase the insurance burden and contribution evasion and reduce fund's income resources. Thus it is suggested that in order to preserve fund sustainability, more coordination shall be established between macro economic policies and social security policies.
- Considering the depth and length of depression or prosperity periods is so important but owing to dominant discretions considerations, the fund has not been able to implement economic management according to business cycles.
- Studies imply that existing imbalance between investment and savings is one of the factors creating business cycles in Iran. The proposed solution is development of

national savings out of promoting participation of private section aimed to finance investments. Therefore SSO aligning with its mission i.e. providing sufficient protections based on accumulated individual savings and by emphasizing on its potential reserves, can play a crucial role in financial markets and control adverse effects of economic fluctuations.

- This paper has compared investment expenditures of social security organization with volume of transactions in stock market. Results obtained can be appropriate guideline that when the direct or indirect investments should be made. Of course considering depression and prosperity periods within different sectors of economy must be taken into account by policy makers of SSO. Principally it's recommended that investments would be made during depression.
- Having promoted informal employment and changes of structure of occupations toward self-employment and micro industry development, the insurer organizations have tended to establish and promote voluntary insurances. Extending coverage and attracting new finances of these employees highly depend on economic environment. It's suggested that SSO shall attempt to cover more voluntary and self employed contributors during prosperity and avoid increasing contribution rate during depression period. Some of these contributors are employers who must pay their workers contributions equal 23 % of payroll (mandatory coverage). Hence their satisfactory would result in evasion reduction.
- And finally, it should be noted that establishing coordination between economic policies and social security policies in addition to intention of social insurer organizations requires conformity of external and governing bodies. As long as management structures of insurer organizations are not autonomous from political discretions and government in order to remove its problem directly or indirectly or by imposing some nonprofessional directives provides interventions, implementing reforms or materializing given coordination would be difficult. It should be mentioned that existing a sustainable social security system leads to stability in country's political and social system.

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