



Identifying and prioritizing the influential factors in the absorption of foreign direct investment the AHP model (Case Study: Kurdistan Province)

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Abstract

Foreign direct investment cannot be only the source of capital production (formation) but also can be more importantly be used as a tool of production technology. Skills, innovation facilities and manage mental and organizational contracts among the parties and reciprocally can act as a device for having access to international marketing network. This research is functional- developmental in terms of objective and based on collecting data and information is of descriptive and experimental type and in terms of implementing method is of measurement type as well. The research aimed to identify and prioritize the effective factors on the FDI absorption in Kurdistan province in 1394. Experts from the research statistical population and the expert sampling method is non-randomly and available, In this research an effort has been made to identify and prioritize effective factors, on the FDI absorption in Kurdistan province using the AHP model and sensitivity analysis method. The results show that economic factors have already been of greatest importance in the province FDI absorption and subsequently political- social and natural factors. These factors such as exchange rate, capital return, energy, natural resources, economic infrastructures, taxes and investment security have the highest effect and other variables such as economy openness, free trade and bureaucracy red line have the lowest effect on the province FDI absorption.

Keywords: foreign direct investment, hierarchical analysis model, sensitivity analysis, Kurdistan province.

Introduction

Economic development requires investment in sections and various economic activities. Without investing in infrastructural and suprastructural projects it is not possible to expect the expansion of employment production and economic welfare. Therefore apart from expended human force and abundant natural resources capital is also necessary to be combined with other factors to launch the production wheel- one of the most important ways of providing required sources for investment is the national savings but in most of the developing countries, national savings rate is slightly low due to the decrease of incomes level and if there is kind of savings. It is very often in a non- economic form and does not ultimately result in capital production. That is why there countries are faced with the lack of financial sources for investment many of these countries. Have initiated the absorption of foreign capitals and foreigner's contribution to industrial

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and economic for the lack of capital and required as one of the ways of providing capital in an international level. In recent years a remarkable part of economic studies has been allocated to discussing the foreign direct investment and considering this phenomenon from such different aspects as prerequisites, commitments, outputs location and geographical perspectives. In a part of performed or realized studies in this piled, effective factors on FDI and their evident effects have been mostly taken into account: since an undoubtedly clear image of commitment and effective factors on FDI inflowing into the foreign direct investment then different countries policy makers will be able to be more benefited from the capital flow in an international domain through meeting them. The identification of effective factors on the absorption of foreign direct investment helps economic- policy makers to provide a more suitable condition for absorbing foreign investment through effectively arranging the policies could result in playing a more active role in economic growth (ostadiet al 1392, 149, 148). Considering that the province investment is not independent of investing factors



affecting the province FDI absorption being under consideration in this research helps economic programmers coordinate the FDI absorption factors to achieve the economic development. In other words, such research results directs the province economy and in particular the country's towards adapting some appropriate strategies in investing with other commercial partners. Foreign Direct Investments (FDI) are those investments that investor directly invest in assets and resources of investee. In this type of investment, the foreign investor with a physical presence in the investment location and accepting the financial responsibility directly is involved in managing the units in the host country (Behnam, Mojtahedi, 1994).

FDI is a private investment that to maintain control over capital acquire at least 10 percent of voting stock in a foreign company. Four effective factors in attracting investment can be categorized as natural, economic, support and encouragement and political (Davoodi and Shah Muradi, 2004).

Encyclopaedia of Palgrave defined foreign direct investment as acquisition of assets by investing outside of home countries. From the Kevin's view, FDI is new investment to gain permanent interest in an institution based in a country other than the investor's, and leads to the right to vote for and thus be effective in the management of the company or institution (Behkish, 2002: 294). Various definitions of foreign direct investment are presented. The UNCTAD defines FDI as an investment ensuring long-term economic relations and represents a sustainable benefits and control of an economic unit resident of a country (parent company) on an economic unit resident of another country (subsidiary branch of parent company). FDI from the perspective of the International Monetary Fund is an investment, which aim to achieve sustainable benefits in a country other than the country of investor. In addition, the investor's aim of this investment is to be effective in the management of agency (Behkish, 2005). From another perspective, with increasing problems of balance of payments and external debt crisis in developing countries and reduction of foreign aid and loans, many changes have been made in attitude towards foreign direct investment in developing countries. Many of these countries reassessed their positions against foreign direct investment and major unilateral steps towards the

liberalization of foreign direct investment into the country have been taken. In fact, a kind of competition emerged among the least developed countries to attract FDI (Tayyebi and Babaki, 2008: 43). The IMF considers foreign direct investment effective in companies where controlled by foreign institutions. The general form of investments is manifested in subsidiaries and affiliated units of transnational corporations. Direct investment can be either new investment or reinvestment of the income of a parent company or loan provided under its control. Direct investment can be recognized from indirect investment with the help of the criteria that it aims for sustainable benefits and gains the necessary power for the management of firms. The prominent feature of this investment is as follows: foreign investment is not only an investment, but also is the transfer of technology, experience and skills in management and marketing and presence in global markets that may be of more importance than mere investment.

In Direct investment, the investor country or company is responsible for manufacturing or commercial finance of company in the investee country and management is of the tasks of the investor company. Investment in financial Cart (indirect) involves all investment of a natural person or legal entity resident in a country on securities of an enterprise of other country. The purpose of this type of investment is acquisition of maximum profits through efficient allocation of capital in in an international portfolio. Investor in order to achieve this goal with the purchase of bonds and shares in the stock exchange and even long-term deposits in banks in other countries provides an optimal allocation of wealth to reduce investment risk and gain more revenue. In this type of foreign investment, unlike foreign direct investment, the investor has an indirect role in management of unit and has no financial responsibility (kazemi et al. 2013: 49). Numerous studies both at home and abroad in the field of foreign direct investment have been done; the most important, most relevant of home and abroad studies can be cited as follows: Dargahi (2006) in a study entitled "Factors affecting foreign direct investment: Lessons of Iran economy" came to the conclusion that although human capital in developing countries alone is not significant in explaining the inflow of foreign direct investment,



but its interaction with variable of accumulation of physical capital is significant. In other words, favorable conditions for investment in interaction with human capital can provide attracting terms for foreign direct investment.

Heidari and Afshari (2012) in a study entitled "Economic and social factors affecting the attraction of foreign direct investment with a focus on governance indicators in the period (2007-1996) concluded that GDP as proxy of market size, governance and environmental sustainability index in the world and the OECD countries was statistically significant. They had the highest impact in attracting foreign direct investment, while in the MENA region, the size of the market, return on investment and economic freedom index showed no significant impact on attracting foreign direct investment. Shah Abadi and Mohammadi(2011) in the article "determinants of foreign direct investment in Iran", concluded that foreign direct investment depends on parameters such as return on capital, openness of the economy, infrastructure, economic growth, domestic investment , natural resources, human capital, inflation, exchange rate, foreign debt, government finances, tax, market size, political rights and the ratio of government expenditure to GDP. The results showed that the natural resources, human capital and infrastructure are directly effective in attraction of foreign direct investment in Iran; in addition, Political Rights as well as the Islamic Revolution had significant reverse effect on foreign direct Investment attraction. Openness of economy had positive and not significant impact and impact of ratio of government expenditure to GDP was negative and not significant in attraction foreign direct investment in Iran. Husseinzade Bahreini (2004) in a study entitled "Factors affecting investment security in Iran" noted that, since security of investments is one of the most important variables affecting investment, so the article has two approach to study the security of economy and the combination of causes of insecurity of investment. The first method involves an objective approach to the issue of security considered the strength or weakness of security agencies in the country .The second method is a subjective approach to the issue of security in a country and insecurity factors and the impact of each factor on the insecurity of the business environment will be questioned from the

actual applicants of security - potential or actual investors-. Now, the logic of this approach is to try to invest in a particular country or industry, a sense of security is important on the part of those who are applying for investment, so causes of insecurity in the investment environment of Iran based on the image provided by international organizations, will be studied (which mainly rely on second method). Blomstrom(1983) in a study evaluated the role of FDI in the process of technology diffusion and economic growth in developing countries, and ultimately conclude that FDI will lead to increased economic growth in the host country and this depends on the attraction abilities of the host country which is determined by human capital available in the country.

Chanlay (1997) did a study entitled "Spatial determinants of foreign direct investment in developing countries". This study in 8-year period (1987-1994) considered about 31 developing countries to assess the determinants of foreign direct investment and to explore foreign direct investment flows the modified gravity model was used. The results showed that the size of the market, GDP growth, Manufacture Efficiency Wage (MEW), distance (the relative distance from the center of the global economy), foreign direct investment save and openness of the economy are significantly effective on foreign direct investment. Gastana et al (1998) in a joint panel econometric model study showed that the corporate tax rate variable, the deviation of the exchange rate, index of freedom of movement of capital, tariff rates, and coagulation terms of contracts, national risk and exchange regime are effective on FDI. The negative relationship between tariff rates on imported products and the volume of commercial activity (openness), corporate income tax, national risk and FDI was significant; In addition, positive relationship between the degree of deviation of the exchange rate, index of freedom of movement of capital, coagulation terms of contracts and floating exchange regime on FDI was significant. Bilgili et al (2012) in an article entitled "Factors affecting foreign direct investment using the Markov-switching approach" explores the dynamics of foreign investment in Turkey during the years (1988-2010). This article states that the growth of FDI in the country, had significant structural changes and its constituent variables includes



growth in GDP, labor costs, the growth of prices for electricity, natural gas, growth of exports and imports, energy, interest rate and risk of European countries and American investors in Turkey.

Onyeiwu (2002) study entitled "Analysis of foreign direct investment flows to developing countries; is the MENA region different?" examined foreign direct investment flows to the least developed countries (LDCS). This study using data from 51 developing countries over the period (1975-1999) reviewed the economic and structural factors on the flow of foreign direct investment and concluded that free trade, corruption and redline of bureaucracy have major role in attracting foreign direct investment. Solutions to address these challenges are the implementation of the privatization program to reduce the size of government and reduce corruption, and support the removal of barriers to trade and the movement toward trade liberalization. Therefore, privatization and trade liberalization in the MENA region are two policies to attract foreign direct investment.

Morrissey (2012) in his study entitled "government, private investment and foreign direct investment in developing countries", using annual data for 46 developing countries-in period (1996-2009) – assessed the relationship between the government and foreign direct investment and private investment. He concluded that governance indicators including political stability, nonviolence, regulatory quality, law and control of corruption have direct impact on attracting foreign direct investment and private investment and the effect of corruption and political instability is more that all aspects of government.

Kandiro and Chitiga (2003) examined the relationship between GDP and foreign direct investment in Africa and concluded that foreign direct investment to GDP ratio is not an appropriate variable to indicate the degree of openness of the economy, especially in service sector. Open economies also benefit from greater prosperity. Open economies also benefit from greater prosperity. They explained variables affecting foreign direct investment such as openness, taxes on international trade that include the import and export duties and taxes on investment income including taxes on investment, infrastructures including roads (per thousand Km), domestic wages, the real effective exchange rate and

corruption that indicate the corruption in the governmental sectors, which means special payments and bribes to obtain permits for export and import.

Material & Methods

The research is applied from the perspective of purpose and from data collection perspective, it is descriptive and it is a field study. In this study, the factors affecting foreign direct investment are identified using library research as well as interviews with sample population experts. The factors identified via questionnaire will be compared by experts and finally with the help of the AHP model and Expert choice, based on hypotheses, will be prioritized and then results will be analyzed and discussed.

Generally, for this study five-stage process was done that can be summarized as follows:

- Examining the factors that attract foreign direct investment and the classification of its components
- Developing the questionnaire and identifying research community sample
- Distributing questionnaires among scholars and collecting them
- Prioritizing components using AHP model
- Sensitivity analysis of results using dynamic and efficient sensitivity charts

In this study, a quantitative-comparative-analysis was used and by Thomas L. Saaty questionnaire, a paired comparison is done between factors and variables by sample study population. Then the data is analyzed using AHP model in Expert Choice software. During paired comparison analysis for each set judgments incompatibility is calculated by Expert Choice software. Incompatibility rate should not be higher than 0.1 (Ghodsi Poor, 2006). Then weighting between factors and variables was done and determining the relative weights and combining them together by Expert Choice, the final weight of the variables was obtained (Moreno et al, 2005a). Finally, sensitivity was done by Expert choice software to evaluate the effect of changes in the weight of the factors and variables.

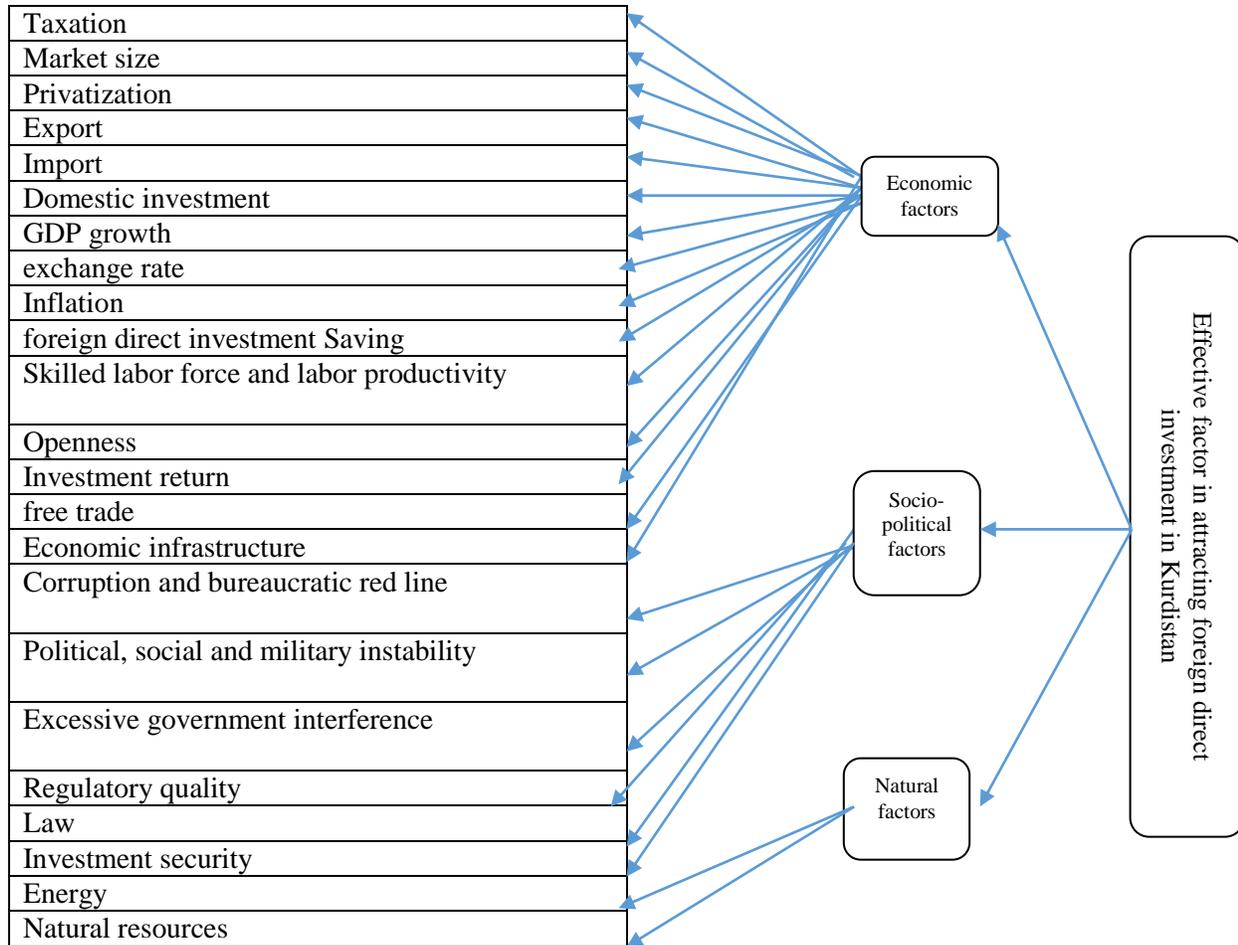


Figure 1. AHP model of effective factor in attracting foreign direct investment in Kurdistan

Findings

According to the data analysis and the results of tests carried, results of this research are summarized. Factors affecting foreign direct investment in Kurdistan are evaluated, which results are as follows:

In Table.2 it can be seen that economic factors with normalized and relative weighing of 1 and 0.652, are at the first, socio-political factors with normalized and relative weighing of 0.331 and 0.216 are second, and natural factors with normalized and relative weighing of 0.204 and 0.133 third in attracting foreign direct investment in Kurdistan. The results showed that factors had different importance and priorities in terms of attracting foreign direct investment in Kurdistan.

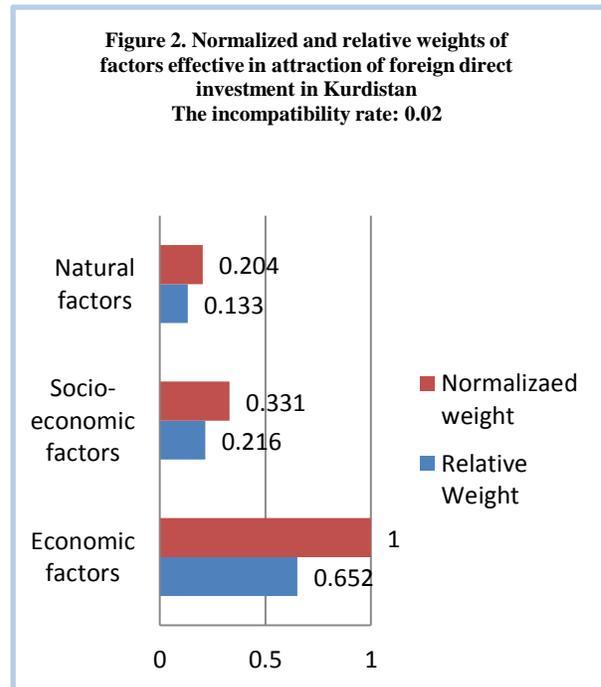


Table 1. Geometric mean of pairwise comparison matrices of factors affecting the attraction of foreign investment in Kurdistan in term of aim and purpose

Factors	Economic factors	socio-political factors	Natural factors
Economic factors		3.49572	4.2443
socio-political factors			1.87851
Natural factors			

Table.2. normalized relative weights of factors affective in attraction of foreign direct investment in Kurdistan

Factors	Normalized Weight	Relative Weight
Economic	1.00	0.652
socio-political	0.331	0.216
Natural	0.204	0.133

In Figure 2, the normalized and relative weights of factors in attraction of foreign direct investment in Kurdistan is calculated and the results are shown in the table above. As can be seen in this table. Incompatibility rate is 0.02, smaller or equal to 0.1 shows acceptable compatibility. The pairwise comparison matrices to determine the importance of factors in terms of attracting the foreign direct investment in the province, based on AHP of matrix is compatible. Variables affecting foreign direct investment in Kurdistan in terms of each of these factors were investigated and the results are as follows: Exchange rate among the economic factor with the highest weight is first and considered as the most important variable and the corruption and redline of bureaucracy among the socio-political factors with the lowest weight was the last and was considered as the least important factor in attraction of foreign direct investment in Kurdistan. Return on investment Variable of economic factors with the final weight of 0.068 and energy variable of natural factors with the final weight of 0.067 are respectively second and third. The variables of economic openness and free trade of economic factors with 0.020 and 0.018 final weight are the twenty-first and twenty-second and as other less important factors in attracting foreign direct

investment. The results showed that the variables affecting foreign direct investment have different importance and priorities.

In addition, to identify factors affecting the attraction of foreign direct investment in Kurdistan, factors were prioritized in distributive synthesis mode and results were shown in figure. 3.

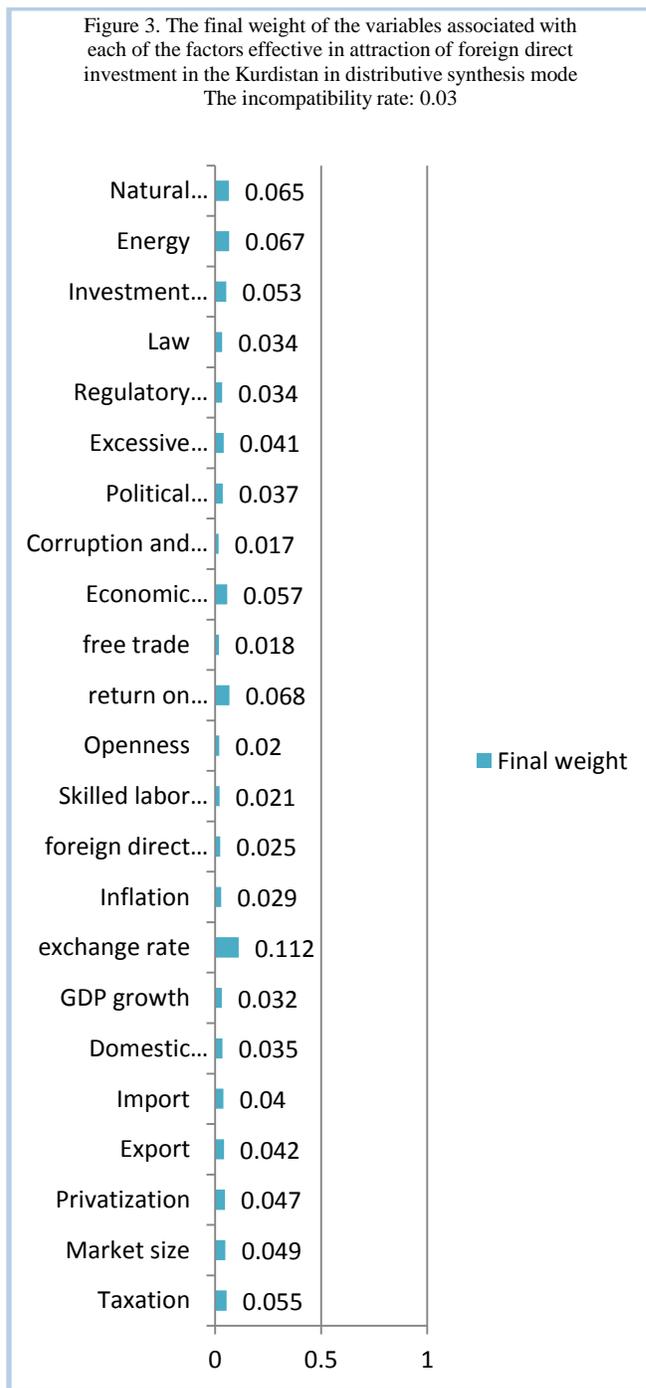


Table.3. The final weight of solutions in distributive synthesis mode

No	Variable	Final weight	No	variable	Final weight
1	Taxation	0.055	13	Investment return	0.068
2	Market size	0.049	14	free trade	0.018
3	Privatization	0.047	15	Economic infrastructure	0.057
4	Export	0.042	16	Corruption and bureaucratic red line	0.017
5	Import	0.040	17	Political, social and military instability	0.037
6	Domestic investment	0.035	18	Excessive government interference	0.041
7	GDP growth	0.032	19	Regulatory quality	0.034
8	exchange rate	0.122	20	Law	0.034
9	Inflation	0.029	21	Investment security	0.053
10	foreign direct investment Saving	0.025	22	Energy	0.067
11	Skilled labor force and labor productivity	0.021	23	Natural resources	0.065
12	Openness	0.020			

Discussion and conclusion

The study of Figure of the final weight in distributive synthesis mode related to prioritization of variables it was determined that the pairwise comparison matrices prioritization on attracting foreign direct investment in Kurdistan, is compatible based on AHP of a matrices. Put simply respondents answer are valid and compatible for the final decision. Therefore, all the variables had appropriate and acceptable weight with incompatible rate of 0.03.

The results of the sensitivity analysis, sensitivity of variables to changes is not equal in all variables. In this study, the change importance of each of the factors of attraction of foreign direct investment in Kurdistan affected the priority of variables effective on it. So that minimum change in significance of factors changes the priority of factors of attracting foreign direct investment. The lowest rate, which the importance of socio-political factors must rise up to change the priority of the variables is 0.7 percent. The lowest sensitivity (the highest rate of increase or decrease in importance) was for the same factor with same percentage. In addition, economic factors and natural factors should rise 0.2% and 0.4% respectively to change priorities of variables. Least of 0.2 percent increase in the importance of natural factors indicates a high

sensitivity of prioritization of variables to changing the importance of this factor. Variables prioritization sensitivity to changes on the importance of each factor showed that variables were least sensitive to the socio-political factors and most sensitive to environmental factors in attraction of foreign direct investment in Kurdistan.

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