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# The Potential for Growth in Foreign Direct Investment in the Horticultural Sector of Armenia

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# THE POTENTIAL FOR GROWTH IN FOREIGN DIRECT INVESTMENT IN THE HORTICULTURAL SECTOR OF ARMENIA

by

Mikayel Khachatryan

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Applied Economics

Approved:

| | |
|---|---|
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Logan, Utah

2011

# ABSTRACT

The Potential for Growth in Foreign Direct Investment

in the Horticultural Sector of Armenia

by

Mikayel Khachatryan, Master of Science

Utah State University, 2011

Major Professor: Dr. DeeVon Bailey
Department: Applied Economics

An examination of determinants of foreign direct investment in Armenia is undertaken to ascertain the potential for attracting foreign investment (FDI) into the horticultural sector of Armenia. The analysis is conducted using survey data collected during face-to-face interviews in August and December 2010. A logit analysis is used to identify the characteristics of firms with substantial current FDI that are operating in Armenia and are planning to undertake additional investment during the next few years. The findings suggest that economic stability and the ability to insure against business risks would encourage FDI. Also, past profitability was dependent on the firm's satisfaction with the regional market around Armenia.

(101 pages)

Public Abstract

The Potential for Growth in Foreign Direct Investment
in the Horticultural Sector of Armenia

Mikayel Khachatryan

This study examines why foreign investors choose to invest in companies in Armenia and is specifically attempting to understand how to attract more investment into the fruit and vegetable companies of Armenia. Investment by foreigners in domestic companies is referred to as foreign direct investment of FDI. The research was completed by gathering information from foreign firms that are already investing in companies in Armenia. This was done by conducting a face-to-face questionnaire with business managers of these companies in Yerevan, Armenia during August and December of 2010. The information gathered from these interviews was used in a statistical analysis to determine if specific characteristics about the foreign investors and their companies in Armenia contributed to whether or not they planned to expand their investments in Armenia during the next few years. The findings suggest that economic stability and the ability to insure against business risks would encourage FDI. Also, past profitability was dependent on the firm's satisfaction with the regional market around Armenia.

# ACKNOWLEDGMENTS

It would be impossible to list all the people that have contributed to this thesis. However, some important acknowledgments need to be given to individuals who made this thesis possible.

First, I would like to thank my major professor and adviser, Dr. DeeVon Bailey. It is difficult to overstate my gratitude for the work that he has done for this project. By having a tremendous experience in academia, he provided me with very good advice, encouragement and great ideas. His personality served as a great example of how person should treat others at work and in general. He patiently worked with me throughout the whole thesis-writing period. I was very honored to have such a brilliant mentor.

I am indebted to all the people who helped to set up interviews with foreign investors in Armenia. I am grateful to Robert Kadaryan, Mher Petrosyan, Hayk Khachatryan and many others who introduced me to many foreign businessmen who took part in the survey.

On a special note I would like to thank Justin Smith who is a USU extension expert. He was a part of a USDA project related to agriculture in Armenia. He told about what his experience was in Armenia and provided with very important insight about the exiting challenges in the economy.

Finally, I cannot forget to express appreciation to all the businessmen who volunteered to participate in the survey. Their sincere responses created the basis for the analysis of this paper and were very valuable.

Mikayel Khachatryan

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# INTRODUCTION

The demand for agricultural products is increasing worldwide at a tremendous rate, and as the global population increases there is an expanding potential for countries to produce agricultural goods for domestic use and for exports. Armenia has historically been an exporter of agricultural goods and is famous for its horticulture. Armenian fruits and vegetables are considered premium products in the region around Armenia based on their high quality and natural taste. Despite its recent reforms made in its agricultural sector, Armenia agriculture remains an unstable and underdeveloped part of the economy. This is because Armenia lacks infrastructure and governmental programs focused on agriculture. After the collapse of the Soviet Union, the Armenian economy has had major difficulties in expanding sales of Armenian products in nearly every sector of its economy including agriculture. Given its good reputation but recent under performance, this thesis focuses on the horticulture sector of the agriculture industry under the assumption that it could grow substantially if more investment in the sector was made. Specifically, this thesis focuses on the potential for revitalizing and growing the horticulture sector of Armenia through foreign direct investments (FDI).

According to the National Statistical Service of the Republic of Armenia, 64% of Armenia's agriculture is based on crops such as wheat, barley, potatoes, tomatoes, apricots, grapes, peaches, etc. Armenian agricultural products are well-known in the region for their high-quality. Armenia has about 452,000 hectares of arable land which, if managed properly, could help support the country's economy and create opportunities for Armenian agricultural exports in the region (Schirinian 2006). From examples set by other countries, it is clear that a flow of international capital into certain sectors of an

economy can create the necessary conditions for economic growth in that sector (Zarsky 2005). This thesis examines the characteristics of companies with FDI in Armenia including their perceptions of the environment in Armenia. It also analyzes the determinants that would entice companies to increase their FDI in Armenia while applying the findings to implications about attracting FDI to the horticulture industry in Armenia. An effort is made to address other issues related to financial interventions in agriculture as well as how specialization may aid in the recovery of Armenian agriculture.

Following the collapse of Soviet Union, many universities in Armenia faced serious financial challenges because the curricula they offered by were no longer relevant to actual market demands. One of these institutions happened to be the State Agricultural University of Armenia which has been struggling for years to recover from the crisis. The University has not yet been successful in designing programs to educate qualified specialists because their programs are very outdated. As a result, it has become extremely difficult to find qualified agricultural specialists in nearly every sector of agriculture including horticulture. That is why it is interesting to observe the labor market in Armenia and the difficulties that foreign investors have with regard to finding qualified professionals in the local market to support their operations. Part of the thesis will be a literature review of FDI in developing countries that will provide background information on FDI and the potential and limitations to revitalize industries including skilled labor issues.

Some problems that the horticulture industry in Armenia faces are systematic and likely would need to be solved through government intervention. For example, out-of-

date irrigation and fertilizer systems could potentially be solved at the government level. Another problem is that the industry does not take advantage of scale economies but is rather driven by the output of mostly small, individual farmers which creates economic inefficiencies. According to the National Statistical Service of the Republic of Armenia, 97.6% of total agricultural output is generated by household and only 2.4% is created by commercial organizations. Little effort has been made by farmers to update the agricultural technology they are using. Old technology creates enormous production inefficiencies for nearly every crop. This is where international investment may potentially play a significant role in improving the situation. Literature on the experience of other countries with regards to improved technology in workplace after FDI will be discussed.

The experience of firms and individuals who have invested in various industries of Armenia is used in this thesis to identify the main challenges and difficulties that could create barriers to investment in Armenian agriculture in the future. The methodology selected to obtain data and complete an analysis to address these issues was to conduct a survey of businesses in Armenia that already have major investment from foreign sources. A questionnaire was developed to study the experience of foreign investors in Armenia. The goal for this thesis was to obtain a perspective from foreign firms and foreign individuals who have invested in Armenia. The interviews with foreign business-owners and managers in Armenia provide information about doing business in Armenia and inform other potential investors about what they should consider before they invest in an Armenian industry such as agriculture.

In the course of the research, the researchers visited Armenia twice to conduct the survey with foreign investors. A questionnaire had 28 questions and arrangements were made to meet and administer the questionnaire with business managers primarily in Yerevan, the capital of Armenia. Because it would have been difficult to find more than thirty agriculture-based firms, interviews were conducted with any firm in Yerevan which had major FDI. The questions ascertained the attitude of foreign investors about the economic situation in Armenia including their perceptions about the level of corruption, economic freedom, the political and economic stability in Armenia, and potential for operating profitably in Armenia. An econometric software package called Eviews was used to determine the relationships between economic factors present in Armenia in terms of their influence on FDI. The software is based on regression models so the results of the survey are based on the statistical significance of individual coefficients for variables in an econometric model of FDI. The survey questions about whether or not the investors were willing to increase their investments during the next two to five years in Armenia were the primary dependent variable in the econometric analysis. Expected future investments essentially encapsulate other factors that the firms consider to be crucial regarding their future investments in Armenia. The study also determines if past investments by these industries have been successful in Armenia and what other important relationships, besides profitability, have been major determinants for investment decisions in Armenia by foreign firms. The survey will also attempt to extract important statistical information about the surveyed firms based on the answers they provide. For instance, the analysis will reveal how investors evaluate the economic stability of Armenia based on statistical confidence.

After looking at the official website of the Ministry of Agriculture of Armenia, it was discovered that enticing FDI is not one of the main strategies for agricultural development of the Armenian government. After talking to a few businessmen and government officials, it was clear that some initiatives have been taken by the Armenian government to bring investors to the agricultural sector. However, these attempts were done on a personal level by some Armenian government officials and the issue of FDI does not appear to be given any attention at the ministry level. This thesis also looks at the implications for agriculture in Armenia from both the potential to attract FDI and the possible impacts from doing so.

The experience of many emerging countries has shown strong evidence of FDI improving the economy in many ways (Paus 2005). In East-Asian countries such as China, Vietnam, South Korea and others, FDI has proven to be effective and enhanced economic development. Armenia is at a stage of development where FDI might help to bring monetary resources to build a sustainable economic platform for the future. On the other hand, the difficult geo-political situation of Armenia has posed serious questions about the potential for its economic growth. Especially in an industry like agriculture, the perspective for improved transportation systems is critical to future growth of the agricultural sector. Armenia is still in a conflict with Azerbaijan and the border with Turkey has been closed since the early 1990s. The only countries that have open borders with Armenia that allow to export and import goods are Georgia and Iran. This fact significantly increases prices on all the imported goods in Armenia including agricultural products. It also makes it difficult for the Armenian agriculture to be competitive in the region and more broadly in other areas such as Europe. The only naval port that Armenia

counts on is in the Georgian shore of the Black Sea where political circumstances are not always stable. This state of affairs has put the Armenian economy at a disadvantage in exporting goods to other countries. Thus, even though Armenia possesses a sufficient arable land to grow different crops, it faces challenges relating to trading them with other nations at a low cost. The survey also addresses this question and will ultimately illustrate the standpoint of international investors on this issue.

With regard to barriers that get in the way of the Armenian economy, internal political and economic issues are not ignored in this thesis. As mentioned above, the negative legacy of USSR is still very much present in Armenia and affects the economy in many ways. Government entities are still challenged by the issue of corruption. Some of the regional government entities are also corrupt and do little to support the farmers. It becomes clear that the development of this industry (agriculture) should not rely only on the government for its success. The issue of corruption may discourage investment in any sector of the Armenian economy. The survey attempts to determine the impact of corruption on the businesses of foreign investors in Armenia.

The other issue that needs attention is the presence of monopolies in many of the areas of the economy, including agriculture. Some businessmen have gained excessive power and control of the imports and exports of some goods. This creates uncompetitive markets for startup as well as existing firms. These firms also have power to ban certain business ideas and initiatives. The monopoly of certain goods like sugar or cotton also affects the prices of other goods and makes it more difficult to do business in Armenia. However, most of the crops are freely traded within the country and can also be exported

to other countries. The survey attempts to analyze the openness of the economy in Armenia as viewed by foreign investors.

# LITERATURE REVIEW

Many authors have argued that FDI plays an increasingly important role in the economic growth of developing countries. This paper focuses on the possible effects of FDI on the Armenian economy and more specifically the horticultural sector. It is also going to talk about the prospective advantages and disadvantages of Armenia with regards to the growth in FDI. Different authors have approached the potential of FDI in emerging countries from different points of view, and these different points of view will be used in this thesis to open up the discussion about FDI. There has been some research done on the agriculture in post-Soviet Armenia as well as the potential of FDI growth in the region. There is also relevant literature on the development of agriculture and horticulture specifically which will be discussed. This chapter will present interesting points and opinions found in the past literature which will help to make the topic of this research clearer.

## *The Need for FDI in Developing Countries*

There have been numerous research studies on the effectiveness of FDI in developing countries. In the book *Foreign Investment, Development, and Globalization*, the author Eva Paus (2005) discusses the case of Costa Rica and how FDI helped the country to grow its economy. The book argues that FDI is essential for the development of a country because it generates expansion of knowledge based assets. The author argues that this expansion accelerates the industrialization process in developing countries. It is argued that FDI should not be ignored when investments are considered in a given country (Paus 2005). The author also points out, that apart from bringing capital into the

country, FDI also raises the productivity of nearly every factor of production in any sector of the economy.

Another study from Kobe University in Japan used panel data to run a few mathematical models to find out the relationship between FDI and public expenditures. Then, this relationship was determined to indicate whether FDI generated economic growth or not. The paper argues that FDI has a positive impact in the early development stages and loses its importance when the country becomes developed (Vu Le and Suruga 2005). Vu Le and Suruga (2005) also used a regression model to show the relationship between economic growth (dependent variable) and different economic factors including FDI.

Table 1 (Vu Le and Suruga 2005) illustrates this interrelationship. One can see in Table 1 that FDI has a positive effect on the economies of developing countries. The correlation coefficient between economic growth and FDI is 0.303 which is quite significant. On the other hand, table 2 (Vu Le and Suruga 2005) shows the correlation between FDI and economic growth in developed countries is represented by a negative coefficient (-1.355). This validates the above-stated point.

Regardless of the general agreement among economists about the overall positive effect of FDI on a domestic economy, there have been studies in the past arguing that FDI may have a negative effect under certain circumstances. Marino (2000) analyses the relationship between FDI and economic growth by splitting countries into two categories - “open” and “closed”. The openness refers to the countries that constitute free-trade and market norms. The paper implements econometric models to find out if the “openness” of countries affects the final outcome. It then argues that open countries gain from FDI flow

**Table 1. Factors That Affect the Flow of Foreign Direct Investment in Developing Countries**

| Variable | Model 3 Parameters | Model 4 Parameters |
|---|---|---|
| *Constant* | -.203<br>(-0.59) | -.421<br>(1.24) |
| Fdi | .303<br>(2.92) *** | .349<br>(6.47) *** |
| Pubcap | .042<br>(1.67) * | .086<br>(3.17) *** |
| Pubcur | 0.012<br>(1.22) | .006<br>(.74) |
| Pricap | 0.065<br>(4.52) *** | 0.067<br>(4.74) *** |
| Fdicur | -.006<br>(-1.28) | |
| Fdicap | | -0.021<br>(4.23)*** |
| Observations | 975 | 975 |
| R-squared | 0.10 | 0.15 |

*Source: Vu Le and Suruga 2005*
*Note:* Value of t statistics in parentheses
*Denotes statistical significance at the 10% level
**Denotes statistical significant at the 5% level
***Denotes statistical significance at the 1% level

**Table 2. Factors That Affect the Flow of Foreign Direct Investments in Developed Countries**

| Variable | Model 3 Parameters | Model 4 Parameters |
|---|---|---|
| *Constant* | 4.394<br>(6.75)*** | 3.029<br>(4.98)*** |
| Fdi | -1.355<br>(4.95) *** | -.122<br>(0.75) *** |
| Pubcap | .210<br>(3.34) *** | .217<br>(2.04) ** |
| Pubcur | -0.075<br>(6.14) *** | -.039<br>(4.10)*** |
| Pricap | -0.005<br>(0.28) | 0.002<br>(0.10) |
| Fdicur | -0.033<br>(4.56) ** | |
| Fdicap | | -0.011<br>(0.16) |
| Observations | 461 | 461 |
| R-squared | 0.23 | 0.20 |

*Source: Vu Le and Suruga 2005*

*Note*: Values of t statistics in parentheses

*Denotes statistical significance at the 10% level

**Denotes statistical significant at the 5% level

***Denotes statistical significance at the 1% level

whereas closed countries fail to do so. In “open countries” the impact of FDI on growth is significantly positive, while it is negative (though not always statistically significant) in closed countries (Marino 2000).

A study similar to Marino (2000) by incorporating regression models between FDI and economic growth was conducted by Mahn Vu le and Terukazu Suruga (2005). Unlike the Marino study, this one examined the effect of capital expenditures on the relationship between FDI and economic growth. Essentially, it points out the complexity of measuring the FDI effect in developing countries versus developed economies. It also makes the argument that the positive effect of FDI is much stronger in the early stages of development and less significant as the country advances (Vu Le, and Suruga 2005). FDI is driven by imperfections in markets for goods or factors of production including labor and production (Zarsky 2005). This ties back to the idea that developing markets benefit more FDI and are more attractive for investors than developed countries.

Zarsky’s (2005) argument about FDI being more effective in markets with imperfections is supported by another study. Wu Jiun-Yi and Hsu Chih-Chiang (2008) also ran a regression model between GDP growth and other factors affecting it and came to the conclusion that FDI is more effective in developing economies than developed economies. They state, “The results of the empirical finding show that FDI can promote economic growth when the host country has achieved a certain threshold of development, initial GDP and human capital” (Wu Jiun-Yi and Hsu Chih-Chiang 2008, p. 7). The stage where the Armenian economy is at this moment is very similar to the conditions described above by Wu Jiun-Yi and Hsu Chih-Chiang (2008).

According to the National Statistical Service of Armenia, average production of fruits and Berries was 302,000 tons in 2005-2009. For instance the same indicator was at 201,000 tons in 1981-1985 pointing out a major growth in productivity after the collapse of USSR. However, Schirinian (2006) argues that Armenia is far from fully utilizing its irrigation capacity. Irrigation potential in Armenia is estimated at 653,651 hectares and investments are required to reach that level. The current irrigation system is built to serve 286,000 hectares out of which 96,000 hectares are non-irrigated (Schirinian, 2006). By presenting these numbers in her book, the author also points out that some investment is clearly needed to boost the advancement of irrigation systems in Armenia which will in turn allow an increase in production in almost any industry.

The general effect of FDI on productivity of businesses has been discussed earlier. But, it is of greater interest for this thesis to examine the impact of FDI on the productivity of the agricultural sector. Agricultural productivity plays a large role in establishing a solid foundation for future economic growth. It can also improve the social welfare of the population by producing more food with the same inputs. The paper by Elibariki Msuya (2007) touches on this idea by taking into account a few examples of countries that experienced FDI inflow by examining the impact of FDI on agricultural productivity. By comparing the smallholders to commercial farms in Tanzania, Msuya (2007) demonstrates the productivity growth among commercial farms which were supported by FDI. The results indicated that agricultural undertakings by estates or large commercial firms who have been able to attract considerable FDI had better productivity measures than smallholders who haven’t received a lot of FDI (Msuya 2007).

*The Post-Soviet Transition*

Talking about developing economies, it will be reasonable to pay specific attention to the post-Soviet countries because the development path that they have passed is substantially different from the ones of other countries. Going through the historical events of the collapse of USSR, the member countries were faced with tremendous challenges of transitioning the economy from socialism to capitalism and inheriting the legacy left by the USSR system. Ticktin in his paper "Why the transition failed" talks about the absence of the conditions necessary for a successful transition to capitalism for all the Soviet countries. He argues that the reforms were not carried out because the government officials kept the old mindset and approach of completing their task and were not ready to make those changes. There has been a process of disintegration of social system in almost all post-Soviet countries which led to disintegration of the society itself. This was mainly caused by national independence, civil war, emigration, growth of criminal enterprise and the exclusion of ever greater numbers from direct participation in that society (Ticktin 2000). Ticktin (2000) points out that the necessary socioeconomic conditions were not present in the post-USSR period which complicated the transition process for post-Soviet countries and created different kinds of capitalistic economies. Furthermore, Ticktin (2000) argues that these newly-formed economies had a flawed foundation and were not prepared to build true capitalism.

One of the main features of communist rule was the strong corruption which existed on many levels of government. Consequently, corruption had a significant impact on the economic developments in all post-Soviet countries. Stefes talks about post-Soviet countries in his book called "Understanding Post-Soviet transition" (2006). As he argues

in the book, corruption lied in the root of unequal privatization of economic entities such as plants, land, factories, and organizations. The author, however, makes an interesting distinction between countries that broke apart from USSR. As examples of two types of developments, he takes Armenia and Georgia. According to the Stefes (2006), Armenia, as opposed to Georgia, inherited a centralized system of corruption which turned out to be beneficial for state capacity and socio-economic environment. On the other hand, countries like Georgia transitioned into decentralized systems of corruption where not only did the state suffer but also the economy. Stefes (2006) states, "It is more likely that informal institutions of systematic corruption are going to thrive on the feebleness of formal institutions. This holds especially true in countries in which the political leadership lacks the capacity to implement and protect formal state and market institutions against hostile interests" (p. 88).

*Economic and Agricultural Policies and Regulations in Armenia*

In many studies, it has been argued that the effect of FDI is positive or negative depending on the policies and the educational level of the workforce. Lyuba Zarsky (2005) in her book *Balancing Rights and Rewards* talks about the importance of FDI in developing countries and about how to make that development fueled by FDI sustainable. Like efficiency spillovers, the positive benefits of FDI on domestic investment and growth depend largely on domestic policies, capabilities and institutions. By analyzing previous cases of FDI in emerging economies, Zarsky (2005) actually argues that governments should promote growth for FDI-based businesses and create an appropriate environment for their future success. This also points out the importance of FDI and that they must be promoted and supported by governments. In this context, it is important to

study laws and policies in Armenia concerning foreign direct investment. It states that the legal regime governing foreign investments and the methods of their implementation cannot be less favorable than the regime governing the property, property rights and investment activities of citizens, legal entities and unincorporated enterprises of the Republic of Armenia (The Law on foreign investments of the Republic of Armenia 1994). Ocampo (1994) in the book *Foreign Capital in Latin America* reveals the most important factors for the attraction of FDI. Talking about the most important factors that help a country to attract FDI, structural reforms and policies that are designed to better control the market interplay have a significant impact (Ocampo 1994).

Favorable regulations do not assure a good business environment. In the case of Armenia, there are a number of problems and bottlenecks in the implementation of the new laws. However, Kubat Umurzakov (2003) in his Country Report addressed a few questions concerning the reality in juridical environment in Armenia. The inconsistency in implementing the laws by the government officials makes investments more risky and uncertain for potential investors (Umurzakov 2003). It is argued by Umurzakov (2003) that a number of laws and regulations are often violated and that foreign investors are frequently faced with corruption. One problem is the black marketing of agricultural products like brandy and vodka. Companies violate granted trademarks which result in threatening FDI in this sector. The experience of foreign firms concerning legal institutions and entities in Armenia will be discussed in the Key Findings of this thesis.

The literature draws attention to the need to reform the agricultural sector in Armenia. The article “Rural Poverty Approaches, Policies and Strategies in Armenia” published by the Rural Poverty Portal (2007) talks about the current shift from poverty

reduction efforts to creation of agricultural infrastructure and appropriate policies to back it up. This is believed to be a better approach. Some of the areas that are in the agenda for reform are the fiscal system and farmer support programs.

*FDI in Armenia*

This thesis has already touched on the concept of FDI and the experience that different countries have had with FDI. It was discovered that economies in different stages of their development embrace FDI differently and that the impact of FDI varies from country to country. In this section, FDI developments and trends will be discussed. The history of FDI in Armenia is not very long since the country gained economic freedom only in 1991. However, a good number of studies have already been conducted on FDI in Armenia. The investment climate has been challenged by a number of factors including a limited local market, weak governance and weaknesses in the legal system (Shiels 2003). The FDI inflow into Armenia had been growing substantially between 1991 and 2005 until the country was hit by the economic crisis (IMF Armenia Team 2009). As one can see from Figure 1 (IMF Armenia Team 2009), FDI went down by 250 million in 2009.

FDI in the area of agriculture was not very attractive at first because the market was not well developed. However, in the beginning of the past decade more and more FDI was directed to the agricultural sector (UNCTAD WID 2004). Table 3 illustrates the flow of FDI to the agricultural and selected other sectors of Armenia. The mining industry has been the largest recipient of FDI in the past. Nevertheless, a total of $3.4 million USD were invested in the agriculture of Armenia by international entities. Kees Van Der Meer (2007) explains this shortage of FDI in the agricultural sector by the fact

that only a few food processing sectors receive foreign investments. The share of FDI within the wine and grape sector in Armenia is much higher, compared to other agro-processing fields (Standort Geisenheim 2011).

The role of foreign capital has gradually decreased along with the development of the Armenian economy, although it still remains substantial. In 2005, FDI made up for 16% of Armenian investment (Maliszewska 2008). The report by Maliszewska (2008) also talks about the primary foreign investor countries in Armenia. Russia had 1/3 of FDI in Armenia before 2006. However countries like France, Germany, US, and Argentina have stepped in and taken some of that share.

*Challenges in the Horticulture of Armenia*

Prior research on the impact of foreign direct investments is very valuable for the current research. However, it is even of greater interest to study the recent history of the agriculture in Armenia in general. Literature is very scarce on this subject but some literature is available.

An interesting study that is reported about here is the report prepared by the ICRA Team in 2004 which aimed at finding solutions in rural economies of the Armenian regions of Sisian and Goris. These two cities are located in the south of Armenia where the poverty level is very high. One of the key findings of that study is that farmers will be much better off if they can form farmer groups and cooperate more actively. The reason why this is suggested is that farmers on their own lack the ability to invest and grow their farms. However, by forming groups or enterprises they can bring together their means and effort to build new businesses. Urutyan and Litzenberg (2010) did a study to find out the needs and weaknesses of specialists in the agribusiness industry. The survey suggests

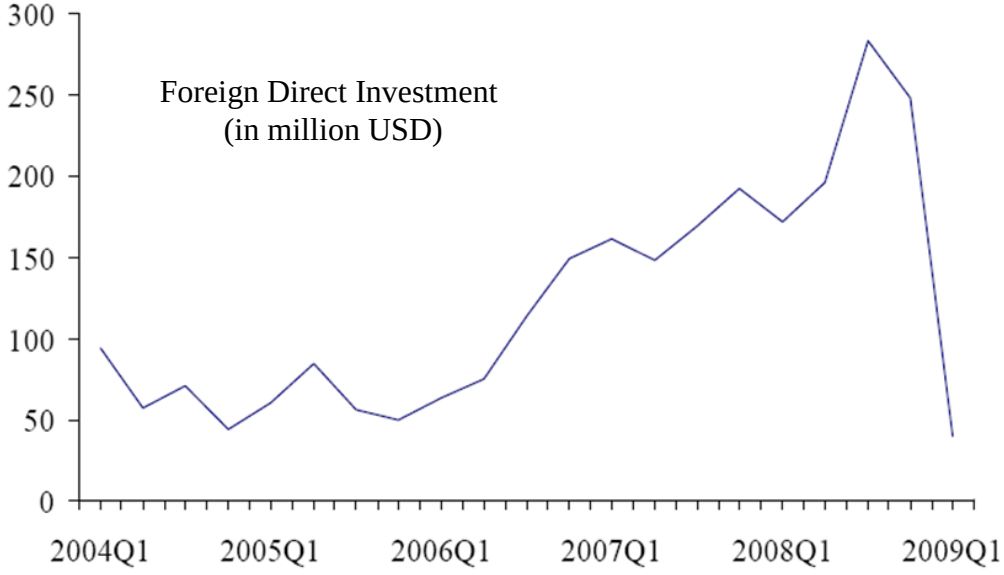


**Figure 1. Foreign Direct Investment in Armenia 2004-2009**
*Source: IMF Armenia Team*

**Table 3. Flow of FDI in Different Sectors of Armenia (in million dollars)**

| Sector/Industry | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|
| Primary | 29.0 | 10.5 | 3.4 | 1.0 | 6.7 |
| Agriculture, hunting, forestry and fishing | - | - | - | 0.2 | 3.4 |
| Mining, quarrying and petroleum | 29.0 | 10.5 | 3.4 | 0.7 | 3.3 |
| Mining and quarrying | 29.0 | 10.5 | 3.4 | 0.7 | 3.3 |
| Mining of metal ores | 29.0 | 2.0 | 3.2 | 0.7 | 3.1 |
| Other mining and quarrying | - | 8.5 | 0.2 | 0.1 | 0.2 |

*Source: UNCTAD WID 2004 Armenia*

the de-emphasis of technical skills and the added emphasis for communication and personal skills (Urutyan 2010). Another change that should be made is to dramatically increase the focus on consumer behavior and professional selling skills.

Armenia has a long-term objective of exporting horticultural products to Russia, Europe, and Turkey. However, countries like those in EU and the USA pose strict standards which are not met by many Armenian food producing companies. Kees Van Der Meer (2007) states, “Replacement of the present system of GOST and Soviet-era sanitary and phytosanitary inspections by an up-dated system based on international standards will reduce costs - and hence improve competitiveness - while also improving food safety and agricultural health” (p. 8).

Past research also discusses the financial hardship it is for farmers to purchase fertilizers and pesticides. The lack of and high prices of agro-chemicals make the situation with agriculture even more difficult (The ICRA TEAM 2004). Factories do not produce chemical fertilizers and their importation requires huge transportation costs. In this situation, the switch to organic farming can be a good solution to this problem also because there are enough agricultural animals to treat land with organic fertilizers and also export some of that (Haykazyan and Pretty 2006).

Serious challenge in the agriculture sector is also posed by the lack of technology at production facilities as well as for transportation. MOM (2010) argues that “High quality fruit on the farm does not always reach the consumer as high quality fruit. Once it leaves the farm it can be damaged through inadequate packing and a lack of cold transport technology. Figs in particular are highly sensitive to damage. Thus some fruit

that left the farmer in good condition cannot be sold as high quality fruit. Some will be lower quality and some will have to be thrown away" (p. 12).

*Prospective of Armenian Horticulture*

In the framework of investments in horticulture, it is important to talk about the organic characteristic of Armenian agriculture because it is valued in the internationally. Darbinyan's country report of 2011 sheds light on the trend of Armenian horticulture towards organic standards. Darbinyan (2011) believes that by meeting international standards for organic products, Armenia can become more competitive in the foreign market. In her country report, Darbinyan (2011) talks a lot about Armenia's potential in exporting horticultural products if these conversions to organic agriculture do occur. It is expected that from 2010 to 2012 new areas will complete their conversion and become certified organic, which will increase export volumes (Darbinyan 2011). Darbinyan (2011) also talks a great deal about Armenia's potential in exporting horticultural products if these conversions do occur. The OSCE (The Organization for Security and Cooperation in Europe) is trying to attract donors and investors to Armenia and believes that it could improve agriculture by creating small and medium size enterprises (Haykazyan and Pretty 2006). It is believed that Armenia has an opportunity for developing agriculture on the organic basis. Some research has also been done on the export potential of Armenian agriculture. The Global CPS consulting group did research on the potential of Armenian agriculture and presented a report in 2008. It uses a few tables and charts to show the recent trends in agriculture and the Armenian economy in general. It focuses on the success of Armenian products in international markets and points out that the exports of products of nearly every industry have grown in recently. It

turns out that Armenia's exports of agricultural products have increased from $50.195 million in 2001 to $109.745 million in 2005. The report also revealed that Armenia had a comparative advantage in the international market for Armenian cognac and crustaceans. The authors were optimistic about the development of other areas of comparative advantage as the agricultural sector develops (Global SPC 2008). As illustrated in the report, food processing in Armenia has been growing consistently during the past decade.

The program Armenwal (2010) in cooperation with a few other organizations has prepared a report on the agro-food sector of Armenia. The paper by Armenwal (2010) argues that the feature that could drive the growth of agriculture in Armenia is its comparative advantage in organic food production. Farmers will expand their production of products such as fruits and vegetables if the quantity of exports increases. It is possible for Armenia to enter international markets for these goods if necessary improvements in technology and production are implemented (Armenwal 2010). Mehrabyan (2009) states in her report that "Long growing season for many fruits and vegetables and the variety, especially for fruits, with a potential for exports gives Armenia the future possibility of becoming a specialty agro-product exporter" (p. 5 ). There is an opposite point of view arguing that it will be difficult to enter these markets. It will be very difficult to compete overseas except for a few crops. There is almost no local market and consumers are not aware of the products. In addition, institutions in that field are inexperienced in marketing and organic food (Giovannucci 2005).

Armenia also has a comparative advantage in the production of dried fruits where there has been a significant growth in production and trade. Jeffrey and Swanberg (2001) in their report address Armenia's export potential in processed fruit industry specifically

in dried and frozen food production. The dried fruit reviewed in this report are a niche market by themselves in the overall fruit market. This is precisely what one should do to create competitiveness in the fruit industry.

There is an opposite point of view concerning the most advantageous direction for Armenian agriculture which argues that only by implementing biotechnology and other modern methods of agriculture can Armenia achieve substantial growth in every sector of agriculture. Kirakosian (2009) points out that plant biotechnology can help to increase agricultural production, raise income, improve food security and nutritional intake and reduce the utilization of costly and sometimes hazardous agricultural inputs and consequently impact the livelihood of rural people.

*Conclusion*

Many of the components of Armenian agriculture were discussed in this chapter. Through analyzing the past literature, one is able to discover a broad scope of threats and opportunities faced by Armenian farmers and food producers. Most of the papers presented supported the opinion that there is a need for FDI in the economy and agriculture as well. Moreover, a few studies suggested that FDI will increase Armenia's competitiveness in international markets. However most of the papers argued that significant improvement needs to be done to achieve those goals. By having a better understanding of the Armenian economy in general, it became clearer what research needs to be done to reach the objectives of this study.

# METHODOLOGY AND BACKGROUND

## *Introduction*

This section provides the objectives of this thesis followed by background information on the horticulture sector in Armenia and highlights the need for FDI in Armenia in general. It provides background information on findings from other studies about FDI in developing countries. It then discusses the research methods which were selected to address questions about potential determinants contributing to planned growth in FDI in Armenia. The discussion in this chapter goes over the methodological approaches used to examine the investment environment in Armenia. Moreover, this chapter will present the reasons why specific methods were chosen and how they were implemented.

## *Objectives*

The literature review showed that FDI can have significant impacts on improving the economies in developing countries. The specific questions addressed by this research are "What are the characteristics and perceptions of companies with FDI in Armenia?", "What are the determinants of companies increasing their FDI in Armenia?" and "What are the implications for Agriculture for the growth in FDI in Armenia?"

## *Background Information on the Horticultural Sector in Armenia*

After the collapse of USSR, Armenia went through a process of restructuring the economy this included the agricultural sector. This process of adjustment turned out to be very difficult. Collective effort was the basis of the agricultural sector in USSR with farmers and growers in Armenia being organized into collective groups (Kolektivnoe

Xozaistvo) during the Soviet era. As a result, those had to group and start household-based agricultural businesses. Following the collapse of the Soviet Union, Armenian farm households were left with their land with no support from the government. This created a major change for these household because the government's involvement in agriculture prior to 1990 included providing markets and price supports to Armenia farmers. As it was mentioned in the first chapter of this thesis, according to the National Statistical Service of the Republic of Armenia, 97.6% of total agricultural output is generated by individual family farms in Armenia and only 2.4% is by commercial organizations. These numbers indicate the weak infrastructure of agriculture in Armenia. The lack of market-based organization and infrastructure in Armenian agriculture has resulted in slow economic progress in the sector. As a result, the Armenian growers and farmers have not been able to keep up (invest) in the newest technology. Due to low level of investment and government support, the horticulture sector doesn't have access to up-to-date equipment.

In the data provided by NSSRA (National Statistical Service of the Republic of Armenia), it was possible to track down the productivity trends in the horticulture sector of Armenia from 2000 to 2009 and is reported in Table 4. Even though these numbers are not known for being very credible, they still indicate some trends in the economy. It can be seen from these tables that the yield per acre has gone up significantly over the past 10 years. The productivity on grape plantations rose from 78.0 to 144.9 which indicate that it basically doubled during this time period. This is due to better use of technology and different kinds of treatments caused by more investments in the field. These numbers point out the high level of fertility of the Armenian soil. Even though the land is quite

**Table 4. Gross Harvest and Yield Capacity for Farms of all types 2000-2009**

| Years | Gross Harvest of fruit, berries, grape ( in thousand tones) | Of which | | Yields Capacity contents per ha | |
|---|---|---|---|---|---|
| | | fruits and berries | grape | Fruits and berry plantations | Grape plantations |
| 2000 | 244.3 | 128.5 | 115.8 | 58.8 | 78.0 |
| 2001 | 218.9 | 102.4 | 116.5 | 47.6 | 81.4 |
| 2002 | 186.6 | 82.6 | 104.0 | 39.7 | 82.8 |
| 2003 | 184.7 | 103.1 | 81.6 | 48.1 | 71.4 |
| 2004 | 262.6 | 113.7 | 148.9 | 39.1 | 108.9 |
| 2005 | 480.0 | 315.6 | 164.4 | 104.9 | 119.7 |
| 2006 | 487.4 | 286.0 | 201.4 | 93.9 | 141.2 |
| 2007 | 479.1 | 260.2 | 218.9 | 79.7 | 153.6 |
| 2008 | 503.6 | 317.8 | 185.8 | 101.2 | 128.0 |
| 2009 | 540.8 | 332.2 | 208.6 | 104.4 | 144.9 |

*Source: NSSRA 2009 Yearbook*

fertile, 40% of the arable land in Armenia is exposed to erosion mainly due to maltreatment and non-productive technology (Schirinian 2006).

The reasons for soil problems include soil salinization, erosion, deforestation, etc. Armenia inherited some of the problems with its land as a result of mismanagement during the USSR era. The paper by Schirinian (2006) contains data about the land use ratios in Armenia in terms of the principal types of plants existing on the land. About 50% of the total land Armenia is occupied by pastures whereas a little over 35% represent arable land that can be used by horticultural activities.

The condition of degrading lands is also discussed in the paper by Schirinian (2006). More than 25% of the land in Armenia is severely deteriorated. Another 25% is deteriorated but not to the same extent and arguably be recovered. The rest of the land varies in its condition though can be utilized by farmers with different rate of productivity. It is obvious that addressing these conditions is highly needed by the growers in order to improve production now and in the future. It can be done in many ways but the demand to use these lands in productive (agricultural) purposes should come first. This is where foreign businesses and individual investors can benefit Armenian agriculture by establishing firms they will likely improve the land to make their ventures more profitable. What will motivate them is the strong potential of the Armenian soil to generate high yields and produce high quality fruits and vegetables that are competitive in the region.

*The Impact of FDI on Developing Countries*

In the previous subsections, the potential for growth and improvement in the horticultural sector of Armenia was discussed. A short overview of the past experience of

emerging economies affected by FDI will be presented here as evidence for the need for FDI in Armenia's agricultural sector. This topic was touched on in the literature review where past studies were discussed to support the notion that FDI can support economic development in countries like Armenia. For example, Table 1(see page 10) in the literature review shows how developing countries benefit from FDI. In that study, the authors ran regression models and discovered that the FDI had a positive impact on GDP of developing countries. The coefficient for the estimated parameter for the impact of FDI on GDP which was the dependent variable reported in Table 1 was .303. This indicates a very high correlation between FDI and GDP growth for the countries considered in that study. In other words, a 1% increase in FDI was estimated to increase GDP by .303%.

This correlation between FDI and GDP growth was discussed in many studies in the past literature, and most of the research done previously revealed similar results in terms of FDI having a positive impact on GDP. FDI is believed to create additional jobs in the economy increase gross domestic investment and finally to boost the exports from the country receiving the FDI (Meyer 2005). The past literature also indicates that FDI brings modern technology to host countries and also improves productivity. Overall, the impact of FDI on host countries is positive especially on developing countries where there is a need for improvement in infrastructure.

*Determinants of Growth of FDI*

Different studies have looked at countries which have received FDI in the past and tried to find similarities and common trends between them in terms of the impact of

FDI. For example, a study by Bevan and Estrin (2000) has examined the economic factors in host countries that affected the flow of FDI.

After selecting a pool of countries for investigation, the study ran a few regression models to analyze the determinants of FDI. All the countries that were selected for this study are in a transitional economic period. The regression models are reflected in table 5 (Bevan and Estrin 2000). In the first model, the dependent variable is the FDI flow into the host country and the independent variables are various factors that can potentially affect it.

The variables with *, **, *** superscripts are respectively significant at 99, 95, 90 percent statistical confidence levels. One of the key findings of these models was that there is a significant relationship between FDI flow and labor unit cost in a host country. The lower the labor unit cost the more likely the emerging country is to receive FDI. The other finding that stands out in the first model is that the coefficient on the first model is the RISK variable which represents the credit rating of the host country. Countries with higher rating have better chances of receiving FDI.

The second model looks at all the factors that make the investment in a given country less or more risky. That is why the dependent variable chosen for the model is RISK which is the perceived risk of the investors towards relative to the host country. The first result that needs attention is the coefficient on the variable PSHR which is the percentage of private sector share in the GDP. This implies that emerging economies with a higher portion of private sector share in the GDP are perceived as less risky by foreign investors. Note that the measure of risk is the credit ratings where higher ratings imply lower risks.

**Table 5. Model 1: Determinants of Foreign Direct Investment, Model 2: Determining Factors of the Perceived Risk of the Recipient Country**

| Model 1 Variables | Fdi (Dependent variable) | Model 2 Variables | Risk (Dependent Variable) |
|---|---|---|---|
| constant | 82.45 | constant | -8.46 |
| | (94.38) | | (12.98) |
| dgprc | 0.01 | pshr | 0.5 |
| | (0.01) | | (0.12)*** |
| hgprc | 1.7 | priv | 3.08 |
| | (0.22)*** | | (1.17)*** |
| dber | 0.29 | inf | -0.09 |
| | (0.33) | | (0.01) |
| eusmp | -25.68 | ggb | 0.91 |
| | (79.94) | | (0.47)* |
| risk | 2.09 | eds | -0.0001 |
| | (1.03)** | | (0.0001) |
| distance | -0.02 | gres | 0.0006 |
| | (0.01)** | | (0.0003)** |
| ule | -180.47 | ind | 0.69** |
| | (86.23)** | | (0.34) |
| ger | 294.22 | bt | -0.26** |
| | (52.91) | | (0.12) |
| usa | 67.15 | Baltic | -13.66*** |
| | (94.38) | | (4.68) |
| baltic | 153.81 | | |
| | (60.09)*** | | |
| baltic.risk | -3.26 | | |
| | (1.64) | | |
| No. of obs | 558 | No. of obs | 44 |
| No. of groups | 151 | No. of groups | 10 |
| $R^2$ | 0.3533 | $R^2$ | 0.7755 |

*Source: Bevan and Estrin (2000)*

Absolute value of t statistics in parentheses

*Denotes statistical significance at the 10% level

**Denotes statistical significant at the 5% level

***Denotes statistical significance at the 1% level

The coefficient on the quality of method of privatization PRIV is also positive and significant indicating less perceived risk where sales to outside owners versus management-employees receives higher ratings for quality of private share. A very interesting relationship is found between “bribe tax” (bt) and credit rating of a recipient country. Countries with a “bribe tax” are more likely to be perceived as being risky than countries with no bribe tax. The other finding that is relevant to our study is the relationship between IND (the share of industrial output) and FDI. Countries with a larger share of industrial output compared to the proportion of FDI are considered less risky by foreign investors than countries with smaller shares of industrial output compared to the proportion of FDI.

A study conducted by Sawkut (2007) took a similar approach and measured a relationship between economic factors and FDI flow by using a regression model. However, some of the factors that Sawkut (2007) examined were different from the previous study by Bevan and Estrin (2000). Sawkut (2007) found that the openness of the economy has a positive effect on FDI. The study also suggested that the quality of human capital is also positively correlated with FDI flow though not as strongly as expected (Sawkut 2007). It is important to mention that the analysis of the model also suggested that political instability negatively affects FDI.

Now that the major determinants of FDI have been identified an appropriate method shall be implemented to examine Armenia’s economy with regards to those factors and the plans of companies in Armenia with significant FDI to expand the level of FDI in the future. The methodology selected will be discussed in the next paragraphs of this section. Moreover, the reasons why the specific methodology was chosen will also be

presented. A clear explanation on how those methods will help the study to reach its goals will also be discussed.

*Survey*

After the determinants of FDI were pointed out, the next step was to find a way to examine the existence of these factors in Armenia. Effort was made to research secondary data on the business environment in Armenia in regard to the determinants of FDI in Armenia and FDI trends in Armenia. However except for a few papers discussed in the preceding chapter, no substantial analysis has been done on that topic. This is why the decision was made to initiate a survey of companies in Armenia with FDI to address these issues.

It was determined from the past literature that certain factors are expected to affect FDI in positive and negative ways. In the previous discussion evidence was provided that economic and political factor somehow affect FDI. The main objective of this study is to examine the potential growth of FDI in the horticulture sector of Armenia. The growth of FDI is very dependent on the economic factors in the sector and in the economy in general.

There are a number of businesses in Armenia that were created due to FDI. Their experience in the country was very diverse. However their experience can be a substantial tool in determining the economic factors that would be important to foreign investors in general. The issues and challenges faced by those firms would be a very good determinant of the investment environment in Armenia. The method chosen to study their experience and expectations was the survey. The survey was to be responded to by foreigners that have started businesses in Armenia and executives who manage foreign

companies in Armenia. It was hoped that the survey would deliver a higher resolution picture on the market in Armenia and will reveal the real potential of growth in FDI. The survey was administered generally to companies with FDI and not specifically to companies with FDI in the horticulture sector of Armenia. This was done assuming that general economic and business conditions affect FDI in all sectors and also to ensure a large enough sample size for statistical analysis. This is also discussed later on.

One of the goals of the survey was to find out the reasons why investors chose Armenia and what motivated them to invest in business activity in Armenia. The survey needed to address all the political and economic factors that determine FDI. The responses to the survey could also lead to statistical results which would be very valuable for this study in terms of making recommendations for how to encourage additional FDI in Armenia. It was believed that the responses from the survey would help to determine the potential for growth in FDI in the country.

After analyzing the type of data that was needed, it was decided to conduct interviews with foreign business owners and managers of foreign companies. It was determined that the economic factors would be best evaluated by executives of those firms since they have most likely dealt with those issues by themselves. Also, many of questions that were to be asked had an abstract nature that could only be addressed in a face to face interview. The respondent was to evaluate difficulties and problems in the Armenian economy and evaluate certain economic factors by simply rating them. This could only be done by having real conversation with those people. That is why personal interviews was the best method for getting insight about the challenges that foreign investors have faced and their future plans for investment in Armenia. Insight into their

future plans would give an idea on their expectations and what the trends are in the market relative to FDI.

The major disadvantage of choosing a survey approach as the primary method for data gathering for the analysis in this study was that there are not enough firms in the horticultural sector that were established by foreign investors. Thus the survey included responses by businesses from other industries besides agriculture and this could affect the relevance of the results in terms of their direct application to the horticulture sector in Armenia. However, a more general investigation of FDI in Armenians is still a reasonable measure of major political and economic factors affecting FDI. Also, there was significant additional effort to include agricultural businesses in the survey to have their perspective. Consequently, businesses of all sectors were selected for this research. A few journals and reports were studied to find businesses that were funded by foreign capital. Selection of participants will be discussed more fully later on.

Before the researcher could visit Armenia and conduct the interviews, the survey received approval from the Institutional Review Board (IRB) at Utah State University. Therefore, a questionnaire was constructed that would address all the goals of the survey and the plan for conducting the survey was put together based on appropriate and approved methods. The IRB approval process included an explanation of the motivation for conducting the survey and methodology that would be used. This was all written down in a brief proposal which was then presented to IRB. The survey was approved by them and researcher could leave for Armenia to visit with businesses. The approval from IRB also helped to make the survey more presentable to businesses which helped the survey progress more smoothly.

*Survey Questions*

The survey goals were discussed above. One of the goals of the survey was to learn about the experience of the firms in Armenia with reference to political and economic factors existing there. Therefore, the questionnaire contained questions about respondents' perception on these issues. As already pointed out, the survey also pursued the goal of finding out about the future plans of the companies which reference to additional FDI planned during the next two and five years. Knowing future investment plans would indicate the expectations of the businesses about the potential for economic success in Armenia in years to come.

After stating and analyzing the goals of the survey, an appropriate questionnaire was supposed to be designed. Before composing the questions, it was important to decide how those responses were going to be analyzed. In other words, it had to be determined which method of analysis was to be used to convert the responses into results that would help to reach the goals of the survey. A decision was made to use frequency analysis and logit models for analyzing the data gathered from the respondents that were to be interviewed. Frequencies would be used to examine certain trends in the economy. This would also help to understand some general perceptions of foreign businesses with regards to the economy and the government in Armenia. The logit model that would be prepared after obtaining the responses and converting them into data would show some relationship between economic and political factors that are most interesting to this study.

It was determined that questions should not be threatening for the respondents and questions that would lead to confidential information must be avoided. In addition to that, an effort was made to keep the questionnaire as concise as possible by taking into

account that the people that the researcher would be meeting were busy executives. The other factor that was taken into consideration was to avoid questions with open-ended answers as much as possible because these types of questions are more difficult to convert into data and then to analyze.

Besides questions about the experience of the business in working in the Armenian economy, the survey included some demographic questions that might also be used if relevant. Questions such as" How many people do you employ?", "How long have you been in business in Armenia?", and "What is the origins of the company or the individual?" were also included in the questionnaire. Furthermore, an evaluation of different factors was asked to be performed by the respondent by asking them to rate their responses on a Likert scale. For instance, the issue of restrictions was addressed by asking the respondent to rate the riskiness he or she perceived by ranging his or her response from "no risky" to "extremely risky" on a scale of 1 to 5. A similar approach was taken for questions concerning perceptions about Armenia's economic stability, labor market, the openness of the economy, etc. In other words, the survey paid attention to the elements of the Armenian market that suggest that it is a free market compared to more of a controlled economy. The survey also attempted to make projections about the future of the Armenian economy. This was expected to help to draw conclusions about investment opportunities the respondents perceived exist in Armenia. Many questions in the survey focused on evaluating the business environment in Armenia. By asking specific questions about perceptions about the business environment to interviewees, the survey helped to find out how feasible it will be for foreign firms to operate in Armenia. In addition, businesses were asked whether or not they plan on hiring more people or

expanding their businesses in Armenia in the future. The actual survey used in this study can be found in the appendix of this thesis.

However, the survey ignored a few factors that may affect the accuracy of the results. First of all, Armenia has historically been connected closely to its diaspora. Armenians from all over the world have always been united and have founded many organizations and foundations that have taken a number of initiatives. Their major goal was to unify Armenians in many countries strive to preserve the language and the religion of Armenians. However, since the independence of the Armenian state, the goals and functions of diaspora have changed substantially. The focus shifted towards supporting the country and unifying Armenians around Armenia. As a result, numerous projects, organizations, funds were initiated to help the development in Armenia. These organizations have also done their best to draw the attention of Armenian expatriates towards the Armenian market. Besides, many expatriates chose to invest and start businesses in Armenia thinking that it will be profitable and, at the same time, beneficial for their motherland. To summarize, there is a significant factor of investment potential represented by the diaspora that was not fully addressed by the survey. However some of the respondents selected turned out to be expatriates. Nevertheless, the questionnaire did not contain specific questions tailored to that matter.

After the questionnaire was finalized and approved by the academic advisers and IRB, the researcher left for Armenia in December 2010 to meet with foreign investors. Every possible effort was put to find companies that originated from other countries or were founded by foreign capital. The reason why only foreign firms* were selected for the survey was that they could point the challenges and the threats in the Armenian

economy form a foreigner perspective. Interviewing local business-owners would not be as adequate because their perception of ideal economy or market can be quite different from the one of an international investor. Besides, it was very interesting for the study to examine the economic motivation of non-Armenians for investing in RA.

It was decided that the interviews would be taken either with the actual investors or the managers who had clear understanding of the operations that were managed in the company. It was first very challenging to contact people and ask their owners or managers to participate in an interview. Personal connections helped the researcher to make contact with businesses of that nature. It was very important to use personal contacts to build the trust as many of questions could have been considered as providing sensitive information by the respondents. Of course, respondents were assured of the confidentiality of their responses and also that they could refuse to answer any of the questions asked.

Different kinds of sources such as magazines, annual reports, personal contacts and advertisements were used to identify as many foreign firms as possible. Next, the researchers started phoning and setting appointments with the business people. Because it was difficult to make contact with the executives of firms, only 35 interviews were taken. The other reason why not many interviews took place was that there are simply not many foreign companies in Armenia at present. As planned, the interviews were conducted in person. Because only the English version of the questionnaire was approved by IRB, the questions were conducted in English. Most of the respondents spoke sufficient English. There were times when some translation was needed to clarify the questions. The approval from IRB was shown to the respondent before each interview to demonstrate

that it was for academic purposes as well as showing the legitimacy of the project. The interviews were conducted in and around Yerevan during December 2010 and January 2011.

*Interpretation of the Responses*

It was briefly discussed above about the methods of interpreting the responses. The first step was the conversion of the responses into data. Each question was coded and transferred into an Excel© spreadsheet. After creating the data, it was decided to obtain numerical results in terms of the trends in the market. The statistical approach taken to address this was to develop frequency tables of the responses to the survey questions. Coding was done in such a way that would allow deriving percentages for each possible answer for closed-ended questions. For open-ended questions, an attempt to search for common trends and interesting observations from the responses was done and then a general synopsis of the responses was reported. Common responses were coded into numbers and treated like closed-ended questions. Simple calculations were used to derive percentages for the frequency of each response. For instance, the question " Are you satisfied with the size of the market in Armenia?" was analyzed by looking at the segment of respondents that chose any of the given options "satisfied," "neutral," or "not satisfied."

The main objective of this study is to find out the potential of growth in FDI which, as discussed above, will most likely enhance the horticultural sector in Armenia. In the beginning of this chapter, the expected main determinants of FDI were discussed. Due to the lack of past studies on that topic in Armenia, it was decided to observe whether there is a prospective of future growth in FDI on the part of survey respondent.

The approach taken to address this subject was to have a question in the questionnaire asking about future planned investment. The question was formed in the following way, “Does your company anticipate a growth in its investments in Armenia in the next two years and after two years?” with “yes” or “no” as possible responses. It is obvious that not every company does investment every two years. Though if the majority of businesses do not plan on expanding, it will become more or less clear that the Armenian economy is not expected to grow and it is not a very attractive market in which to invest. The answers to this question were then be analyzed by frequencies and the portion of firms that plan on expanding their businesses within two or five years will be clear. Nevertheless, it was necessary to expand the analysis and examine the economic factors that affect this stated planned growth in investment in Armenia. It was found necessary to identify a relationship between the experiences and perception of the businesses about the economy in Armenia and their plans for future expansion. For this purpose, various models were formulated to examine the influence of different economic factors on planned future FDI that could be ascertained from the questions in the survey. For instance, it was interesting to know to what extent the satisfaction with the market size in Armenia is correlated with the expansion in investment. Thus, the willingness to expand the investment was the dependent variable. That means that there can only be two possible outcomes, “yes” or “no.” In addition to that, satisfaction with the market would be one of the independent variables.

Investment plans are a function of expected profitability. If a firm foresees a future profit, it is going to invest in a given market to maximize the profits. What is important for this specific study is the determinants of expected profitability. The

determinants of expected profitability are price, income, costs, and technology. These relationships are described below.

$$IP = f(E(\pi))$$

where E(π) is the expected profitability and IP is the Investment Plans

$$Q_D = f(Price, (t + p), Income)$$

$$Q_S = f(costs, technology)$$

Consequently, E(π)= $f$(Price, Income, Costs, Technology)

Therefore, the cost factor must be assessed. In addition to observe the average income level in the economy, the strength and stability of the economy also needs to be addressed by the model. To fully measure the demand for a given product, the market size also needs to be incorporated in the model.

The application of logit models is very wide-ranging. The main distinction of a logit model is that it is based on qualitative (binary) dependent variables. logit models are useful when the dependent variable is binary. In the case used for this research, the dependent variable in the logit model is set up as a dummy variable (the dependent variable is set equal to 1 for those companies planning to invest in Armenia in the near future and equal to 0 for those not planning to do that). This implies that the predicted value of the dependent variable could be interpreted as the likelihood that the firm will or will not expand the investment in Armenia. By regressing the dummy dependent variable against various independent variables the value of the dependent variable falls with 0-1 and thus can be interpreted as a probability measure. As one may notice, there might be an obvious inaccuracy in the calculations because the value of the dependent variable may fall outside 0-1 range. This issue could be solved by making those values equal to 0

or 1 as appropriate. The other distinction of the logit model is that the error term in it is hidden. In the traditional regression model, the relationship is expressed as

$$y=\alpha+\beta x+\varepsilon, \text{ where } \varepsilon \text{ is the error term}$$

In contrast, the logit model has $(y=1)=f(x)$ where f represents a functional form. This is a very important aspect for understanding how the model could be used for estimating probability. The logit measures how much a particular characteristic (independent variable) adds to the probability of the dependent variable taking on the value of 1. This is estimated by looking at the marginal effects of the equation. If the effect on the dependent variable is 0.01, it would imply that the characteristic of the firm increases the probability of the dependent variable being 1 by 1%. In the case of a continuous variable, each unit increase of the specific characteristic will raise the probability of dependent variable being 1(in our case, investing in the near future) by 1%.

Since a logit model will be used for the analysis, the questions will either be coded into dichotomous or continuous variables. The questions that were expected to have random numbers as responses were treated as continuous variables. Continuous variables are the ones that can take on any value. However, the questionnaire had many closed-ended questions such as the one mentioned above (satisfaction with market size). There were many questions where responses range from 1 to 3 or from 1 to 7. Nevertheless, in a logit model, this must be transformed into dichotomous variables. Dichotomous variable can either take a value of either 0 or 1. In other words, the responses that may range from 1 to 5 with 1 being strongly disagree 2 disagree, 3 neutral, 4 agree, and 5 strongly agree, a variable can be created that equals 1 if the response were 4 or 5 and equal 0 if the responses were 1, 2, or 3. For example, the question about the portion of operations in

Armenia where there are 6 possible responses, the variable might be set to 1 if it is below 50% and 0 otherwise.

The next step in the analysis was to select the independent variables that economic theory would suggest should impact future planned investment by foreign companies in Armenia. As it was mentioned above, the independent variables will include company specific measures (size, number of employees, type of investment, etc.) and the company's perception of the economic factors such as how they evaluate the risks in the market, the economic stability of Armenia, and the difficulty of doing business in Armenia.

A great deal of attention was given to the selection of explanatory variables to avoid formulation errors. Effort was applied to avoid *colinearity* among various variables that could be placed in the model. *Colinearity* is the linear relationship between two explanatory variables. In other words, when two variables are correlated to each other it creates overlap in the model and distorts the coefficients. Or, in other words, two or more variables explain basically the same thing in a regression model and one can't interpret the precise contribution of a collinear variable and the variance of the estimate is also affected. That is why obvious correlations between different questions were dismissed from the list of potential independent variables. For instance, the question about market-entry restrictions is highly correlated with the question "At first, did you encounter difficulties entering the Armenian market?" These two questions are essentially addressing the same thing concerning the difficulties to enter the market and the responses to them would most likely be much correlated. Therefore, one of the questions (in this case the one about market entry restrictions) was left out of the regression to

avoid errors in the results. A few questions were treated similarly due to the same question.

Before formulating the regression model, it was important to state the economic theory that was the basis for the model. When evaluating the investment plans it is critical to theoretically analyze what impacts planned investment. Investment plans are a function of future expected profit. In other words, if a company anticipates growth in case of expansion it will expand given a perfectly free market. Then, the next step is to identify what are the main factors expected to influence future profitability. From the standpoint of supply, the main factors are costs and technology. On the other hand, demand is a function of expected future price, income as well as tastes and preferences. These are the main areas of interest and the independent variables will be based on them. As the number of observations is expected to be less than 40, it would not be possible to include all the variables that are relevant due to degrees of freedom issues. Very strict selection was imposed to come up with a model with acceptable number for degrees of freedom. There were a total of eight independent variables in the logit model that was used. The first model will estimate the factors that affect the IP.

$$IP = f(Cost_i, Profit_i, Closebus_i, Unstable_i, Uninsure_i, Govtake_i, Unsatarm_i, Unsatreg_i)$$

This equation will be used for both two-year investment plans and plans after two years. The $Cost_i$ variable is a dichotomous variable and has *risky* and *not risky* as the possible outcomes. It is expected to have a negative sign because it is set to be 1 if the answer is “it is risky.” Therefore these variables and the dependent variable are expected

to be inversely correlated. All these factors play a role in the agricultural sector and it will be interesting to see if there is any kind of correlation.

$Unsatarm_i$ and $Unsatreg_i$ are dichotomous variables and were expected to have negative signs as businesses that are satisfied with the size of the market would be more likely to invest more in the country. It was assumed that marketing to other countries in the nearby region could be accomplished with relative ease. Quite the opposite, firms that find the market saturated will be hesitant to invest more in Armenia.

$Unstable_i$ was also expected to have an impact on the future stated investments in Armenia. Because it is set equal to1 if the respondent considered Armenia's economy to be unstable, it was expected that this variable would be inversely correlated to stated future planned investment in Armenia. Similarly, the variable $Govtake_i$ was projected to have a negative sign, as it was set up to 0 if the businesses believed that this was not a potential problem.

$Govtake_i$ is a very important variable because many of firms indicated that there is this type of risk in the Armenian economy. It is set to 0 if the risks of confiscation are not considered to be very high by the respondent. It will therefore be inversely correlated to *investment plans* and is expected to have a negative sign.

The $Uninsure_i$ variable is also very critical because the decision of expanding very often depends on the ability of protecting of the existing property from various insurable risks. It also plays a big role in agriculture in general. The variable is treated in the same manner as the previous one.

The variable $Profit_i$ was set equal to 1 if the answer was "yes" and thus was expected to have a positive sign. The variable $Closebus_i$ represents a very important

economic factor that could potentially have an impact on companies' willingness to invest. That is why it was expected to be positively correlated with the dependent variable. $Closebus_i$ was set equal to 1 if the answer was "difficult" and thus is expected to have negative sign.

The very first test that will be performed on this model is hypothesis testing. Hypothesis testing is used to check the significance of the coefficients of each independent variable. Or, in other words, whether the independent variables contributed in a statistically significant way to the probability that the company was planning future investment in Armenia. It is performed by using the standard errors for the estimated coefficients from the model and their associated t-statistics. Its goal is to examine the relationship between the dependent variable and the independent variables. It is very important in determining the relevance of variables in terms of their influence on the desire to invest in the future in Armenia and can be a very good tool in eliminating unnecessary variables from the model. It will be used in our model to eliminate insignificant variables from the model.

All these relationships were tested by the model so that appropriate conclusions could be drawn. After regressing the dependent variables on the independent variables, the model was tested for colinearity again. The testing method used for this model was VIF (variance inflation factor) which determines if there is colinearity between independent variables. If the results of the test indicate colinearity then appropriate actions would be taken. If correlation is found between two or more independent variables only one would be left in the model to reduce the bias created by colinearity.

The other bias that the model might run into is the issue of heteroscedasticity. heteroscedasticity occurs when the predicted value of the dependent variables have different variances depending on the value of one or more of the independent variables. For instance, if small firms systematically give different responses than large firms, heteroscedasticity may be present. It cannot cause the coefficients of the variables to be biased though it can distort the values of standard errors. By misrepresenting the standard errors, heteroscedasticity can impact the hypothesis tests by making them biased. This is why it is very important to test for heterosedasticity. The test that was be used in our study is the White Test. It tests whether the error variance is affected by any of the variables, their squares, or their cross-products. It is very useful in identifying if the error variance is biased. If the test reveals results that would identify presence of heteroscedasticity and error variance bias, the Newey-West estimator will be used to adjust for it. The new heteroscedasticity-robust estimators will be reported and analyzed if heteroscedasticity is found. Otherwise the estimates will be reported without correcting for heteroscedasticity.

The other important factor that will receive attention is the possible bias caused by omitted variables. In regression models, the set of independent variables may cause bias in the results if some important factors are left out of the model. This can be tested by using the R-squared. R-squared measures the goodness of fit but it can also be a good estimator for checking if there were omitted variables. The F-test will also be performed on the model. The purpose of the F-test is to check for the joint significance of all the variables in the model. It is a very good tool in determining the relationship between the

dependent variable and the whole set of the independent variables. All these tests are very important for determining the significance of the model and analyzing the results.

*Concluding Remarks about Methodology*

By studying secondary data, it was determined that there was a potential for growing FDI in the horticulture sector of Armenia. There were facts presented in this chapter which suggest that not only is the current agricultural land in Armenia being used inefficiently, but that there is more arable land in Armenia that can be used for growing crops (Schirinian 2006). FDI was recognized as one of the most efficient strategies of development of agriculture in a developing country such as Armenia. In order to evaluate the investment environment in Armenia, existence of FDI determinants in the country had to be examined. After identifying all the factors and determinants that affect FDI, an appropriate methodology needed to be created to reach the goals of the paper. A survey was chosen as the best method to realistically evaluate the business environment in Armenia that is important to an investor. A decision was made to visit companies in Armenia and conduct personal interviews with their executives assuming that the most truthful responses which would yield the most realistic results would best be obtained in this fashion. Afterward, the responses of the survey would be analyzed through calculating frequencies and developing and running regression (logit) models. The frequencies will indicate the current state of the economy as it is perceived by the executives of foreign firms. The regression models will indicate the relationship between companies' willingness to expand and their current perception of the economy and other factors. The negative aspect of the survey is that it regards the economy as a whole and

does not focus on the agriculture sector only. However, effort was made to contact as many agricultural firms as possible.

# RESULTS AND ANALYSIS

## *Introduction*

The main objective of this thesis is to identify the potential for FDI growth in the horticulture sector of Armenia. The potential of growth in agriculture in Armenia was discussed in the previous chapter. Moreover, the secondary data supporting the point that FDI can boost the economy including sectors such as agriculture in an emerging country were discussed in the previous chapter. Therefore, this thesis is concerned with the ability of the Armenian economy to attract more FDI.

The survey was chosen as the main methodology for obtaining quantitative results that would determine the perceptions existing in the business community in Yerevan about the business environment in the country of Armenia. With the use of simple statistical frequencies and logit models, results will be obtained which will assist in evaluating the investment potential in the economy. The credibility and precision of the findings will also be discussed. This is followed by an analysis which will lead to recommendations for future investors.

## *Survey Characteristics*

After the list of potential respondents was formed, the researcher began contacting the executives of these companies. The list had about 40 contacts. However, it was not possible to set up appointments with the managers of all the firms on the list. A few of them refused to participate in the survey and some couldn’t arrange a time. As a result, a total of 35 interviews were conducted on which the results reported in this thesis are be based. The sectors represented by the companies vary widely. Effort was made to visit as

many agricultural firms as possible. It was hoped that agriculturally-related companies could give good insights about the developments related to FDI in that particular sector. As a result, about 10 companies are included in the sample that are more or less related to the agricultural sector.

Some of the interviews were conducted with the investors themselves and some with the top executives. A lot of the respondents who were the actual investors were citizens of countries other than Armenia. Interestingly, some of them have moved to Armenia and learned the language. However, a lot of the investors did not reside in the country and had their assistants manage the company. This was the case with most of the larger multinational companies.

The findings from the statistical frequencies of answers to survey question will be presented next so the reader can have a general idea on how the Armenian economy is perceived by foreign investors. It is important to mention that those who did participate in the study went through a face-to-face interview process where the researcher assured confidentiality. As a result, the executives and business owners felt very comfortable to share their experience and gave very sincere answers.

*Survey Responses*

During the process of conducting the survey, some of the questions were excluded from the questionnaire as they were not relevant. For instance, the researcher was informed by one of the respondents that there has not been a single case of patent registration in Armenia, thus the question about patents was eliminated and appropriate conclusions were drawn. After the interviews were performed and the responses were

converted into data, the research team proceeded to analyzing the data. The quantitative analysis was performed in two ways; statistical frequencies and a logit model.

*The Overview of the Companies*

Statistical frequencies will represent the distribution of responses. Interesting findings about common responses among respondents will also be illustrated on graphs and tables. As was already mentioned, the sample contains 35 observations and all the illustrations will be based on that sample size. The thesis will start presenting some of the specific characteristics of foreign firms in Armenia. This encompasses their demographics, size, type of venture and etc. The respondents were asked about the type of investment in the company made by foreign investors. It turned out that the majority of the companies started by foreign investors were new venture companies. New venture represents all the Greenfield companies that were initially created in Armenia and were not a part of bigger firms. Greenfield investment refers to all the firms that were built in areas where no previous facilities existed. The other types of investment that were listed as answers to the question were acquisition, joint ventures, alliances, subcontracting. As it turned out, the majority (54%) of the respondent chose Greenfield as the type of investment. The other answers were distributed evenly. The average years of doing business in Armenia was 6.5 years ranging from start-up companies to businesses that have been in the country since the collapse of USSR.

Another characteristic of companies that the survey observed was the initial contact in Armenia that was used by the investor before the initial investment. The greater part of the respondents used an individual as a source and support to get started in Armenia. This person helped the investor to learn about the country and investment

opportunities. The size of the firms varied significantly. However, more than 82% of all the interviewed businesses had fewer than 300 employees while about 37% of them had a workforce of about 50 employees. At the same time, the proportion of Armenian citizens among the employees was above 95% for nearly all the businesses that took part in the survey. In terms of the portion of revenue constituted to the operations in Armenia, the responses were spread equally among the answers. There are firms that obtain most of their revenue from their sales in Armenia. Conversely, there are firms that have only a small share of their revenue generated in Armenia. Those with a small proportion of total sales from Armenian operations were the bigger foreign firms for the most part. However, a lot of the firms that have most of their revenue from Armenia are the ones that operate only in Armenia. Those that solely operate in Armenia amounted to about 32% of all the firms that were surveyed. The rest of the interviewed firms have their branches in other countries or in the home country.

The country of origin for the firm or the individual investor varied substantially. However, the companies that were Russian or were started by Russian investors made up 33% of all the firms whereas French investors were the second most common with a portion of 20% of the sample of firms interviewed.

*Perception of the Economy by the Investors*

The survey contained a number of questions about investors' perception and expectations about the business environment in Armenia and the economy in general. One of the factors that was studied was the perception of riskiness of various economic factors in Armenia. The respondents were asked to rate the riskiness of economic factors on a scale of 5 ranging from "no risk" to "very risky.

Figure 5 illustrates business-owners' view of riskiness of several economic factors. The responses were broken into two categories (risky, not risky). The options "moderate risk", "risky" and "very risky" were grouped together and are represented in the Figure 5 (the proportion of respondents indicating the factor was either moderately risky, risky, or very risky is represented as a proportion of total respondents to the question in Figure 5). The largest area of concern for investors was the transportation. This was anticipated given the fact that Armenia is a landlocked country. On the other hand, 60% of respondents pointed out production factors as a challenge in the economy. The other factors that were viewed relatively more risky by investors were labor and cost with 60% and 57%, respectively.

Overall regulatory factors such as governmental restrictions were not perceived as risky except for post-entry restrictions. Post-Entry restrictions refer to restrictions that firms are faced with after entering the market. An example would be a restriction for grocery stores to buy a type of a product from one supplier to ensure free market conditions. On the other hand, entry restrictions are the laws and regulations that firms need to meet to be able to legally enter the market.

Since Armenia does not have a very large population, it was interesting to find out whether firms were satisfied with the market size they have targeted with their operations in Armenia. The participants were asked if they were content with the market size in Armenia as well as the region surrounding Armenia. More than the half of the interviewed investors (57%) was not content with the size of the Armenian market. However the companies that were exporting to surrounding countries in the region were

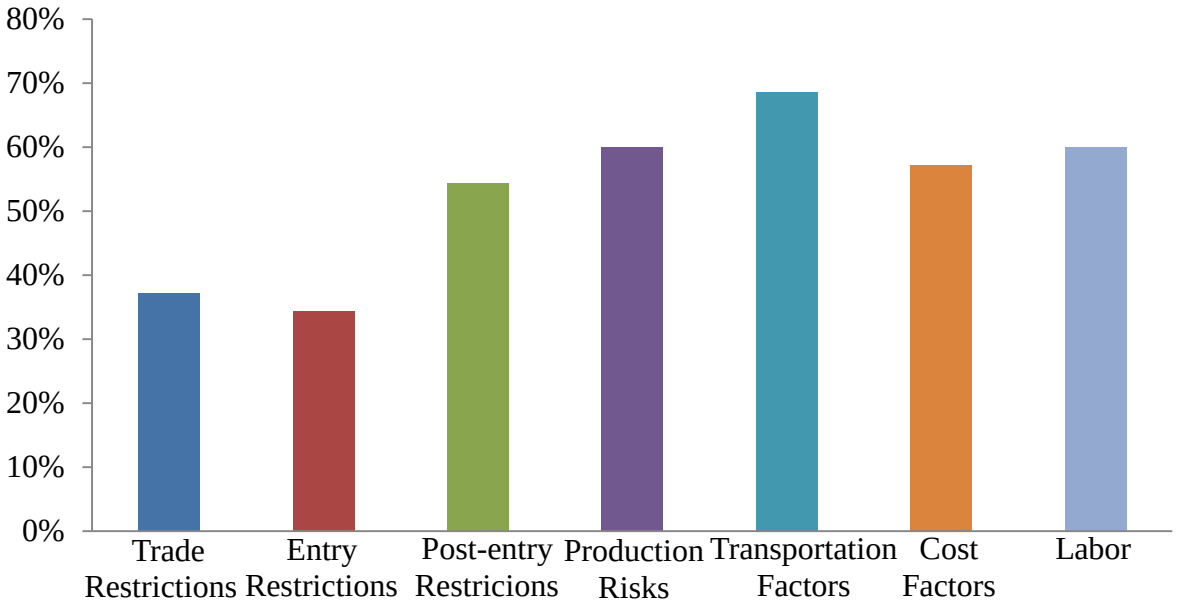


**Figure 2. Perceived Economic Risks**

fulfilled with the size of the market. More precisely, more than 75% of businesses that were operating in the region did not see the market size as an obstacle for their business.

Some of the other factors addressed by the survey were the economic stability, openness of the economy, difficulty of finding labor and the ability to conduct business openly. These questions intended to identify the overall economic situation in the country. Economic stability is very important in determining the investment environment in a given country. The vast majority (87%) of the respondents do not find the economy stable. The investors were also critical about finding sufficient labor. Roughly the half of the investors had difficulties finding employees for their businesses at one point. Openness of the economy was also perceived as an issue by 35% of the respondents. As it was expected, the majority (63%) of the respondents thought it was difficult to conduct business openly and honestly in Armenia.

It was also interesting to study the profitability of businesses that were visited. Most of the firms that were interviewed were quite successful in the past. It was determined that a little less than 70% of businesses enjoyed growth in profits in the past. That does not include a few firms that recently started in Armenia and obviously are not likely to have profits yet. The results also suggested that a lot of foreign firms in Armenia have significant level of sales as above 75% of interviewed business have annual sales that exceed $700,000. One of the goals of the survey was to identify if companies are capable of protecting their assets and investment. The potential threats that were addressed in the survey were lack of insurance, confiscation and government interference. The responses to this question are illustrated on figure 6. The respondents were asked to rate the extent of protection on a scale of 1 to 7. Similarly, the responses

were then broken into two sections (protected and not protected). The following table illustrates the segment of respondents who did not feel protected in those three categories of risks.

Insurance refers to the ability of investors to protect their assets through purchased insurance products. The respondents viewed this question as a comparison with the same factor in their home country. As we can see, it is a concern for the investors and 35% of them cannot rely on insurance companies to insure against business risk in Armenia. The question more specifically referred to insuring physical assets such as land and facilities.

Government interference was considered a threat for about 45% of the investors. Government threats include a wide spectrum of malfunctions of the government that make investors worry about the safety of their assets and investments in Armenia. This also takes into account tax collectors and government officials with regards to their competence and honesty. Many respondents expressed concerns about the potential for unfair government interference and considered it as one of the main threats to doing business in the Armenian economy. On the other hand, the investors do not consider a threat of government confiscation of assets as a substantial risk. The businesses are more or less protected from organized crime and consequently see the government as the main source of business risk. Confiscation implies situations when businesses are threatened by a group of people that claim to have claim on property owned by the business. According to the survey results, this type of threat (confiscation) is not very likely to happen. However, a few companies to consider confiscation as a possible threat because 11% of respondents saw confiscation as a possibility.

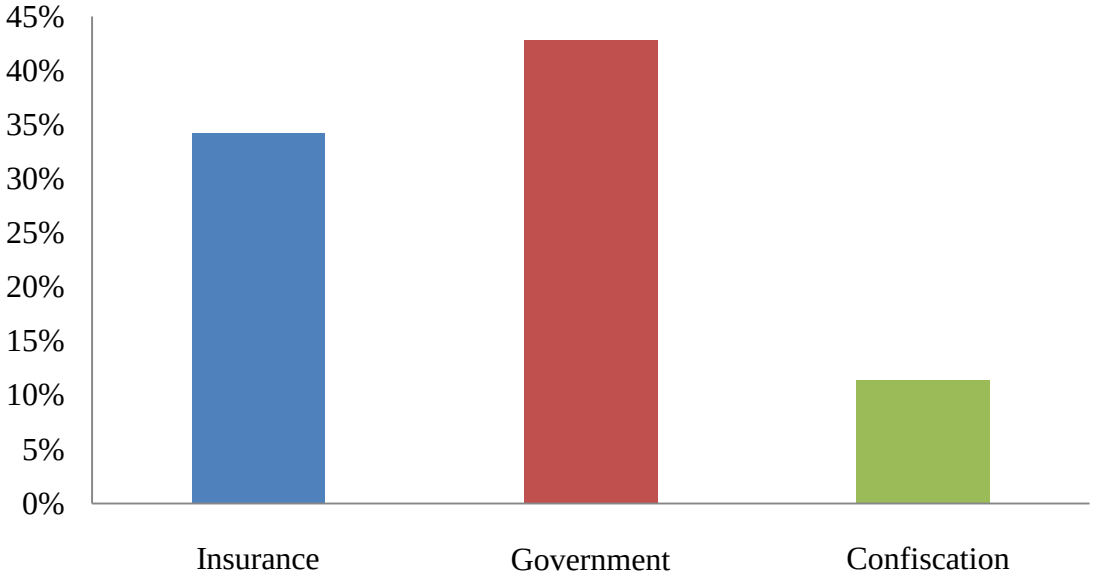


**Figure 3. The Ability to Protect from Different Risks**

The responses to the question about future investment plans was also observed using frequencies, but was more elaborated on further by the results from the logit model which shall be discussed later. However, the response frequencies are very interesting in terms of the past experience of firms in Armenia. As one would expect, firms were more optimistic about investing in the near future than in long run. Those planning on expanding investment in the business in the next 2 years constituted about 55% of the interviewed businesses compared to 40% of the businesses who are planning to expand investment in Armenia after more than two years.

*Determinants of Future FDI*

This section discusses the findings obtained from the logit model presented in the previous chapter. The goal of the logit model is to examine the factors which determine planned FDI growth in existing firms with foreign investment in Armenia. The results from the model where the influence various independent variable had on planned investment in two years and after two years. The model was supposed to determine the marginal effect in terms of marginal additions to the probability of additional investment of the dependent variables (economic stability, market size satisfaction etc.). The findings from the model with two years planned investment are presented first.

The results from the model are depicted in Table 6. This table contains the parameter estimates for the characteristics of each variable which represents the relationship between the factor and the dependent variable. However, the analysis of the model focuses on the marginal effect of the independent variables on planned investment.

**Table 6. Parameter Estimates and Marginal Effects for the Logit Model Examining Characteristics That Affect Two-Year Investment Plans**

| | Pseudo $R^2$=.17 | |
|---|---|---|
| | Parameter Estimate | Marginal Effect |
| *Constant* | .088 | .022 |
| | (1.22) | (.30) |
| COST | 1.33 | .31 |
| | (1.05) | (.22) |
| PROFIT | .99 | .24 |
| | (.93) | (.22) |
| CLOSEBUS | .93 | .23 |
| | (1.04) | (.26) |
| UNSTABLE | -1.65 | -.37 |
| | (1.10) | (.21)* |
| UNINSURE | -1.95 | -.45 |
| | (1.15)* | (.23)** |
| GOVTAKE | -.98 | -.24 |
| | (1.38) | (.31) |
| UNSATARM | .72 | .18 |
| | (.89) | (.21) |
| UNSATREG | -1.04 | -.25 |
| | (1.29) | (.30) |

| Actual | Predicted Value | | Total Actual |
|---|---|---|---|
| Value | 0 | 1 | |
| 0 | 9 | 7 | 16 |
| 1 | 4 | 15 | 19 |

*Note:* Standard Errors are in Parentheses
*Denotes Statistical Significance at the 10% level
**Denotes Statistical Significance at the 5% level

The parameter estimates for each variable then represent the marginal contribution of each particular independent variable to the probability of the company planning to increase its investment in Armenia during the next two years. The value of independent variables were discussed in the methodology chapter, thus the discussion will proceed to presenting the findings of the model.

The dependent variable in this model is whether or not a company plans to increase its investment in Armenia in the next two years. The Pseudo R-squared of the model implies that the dependent variable is not entirely explained by the parameters included in the model. Despite the fact that the model contained only 35 observations, it revealed a few significant relationships. The measure used to identify the significance of variables is the p-value associated with the parameter estimates and standard errors for the marginal effects. The p-value determines if there is a statistically significance relationship between the independent variables and the dependent variable at the associated confidence level. For example, a p-value of 0.05 indicates that there is only a 5% chance that there is no relationship between the dependent and independent variable. Another way of describing this example is that one can have a 95% level of confidence that there is indeed a relationship between the independent and dependent variable. As one can see from the table, only two variables fall are statistically significant, or in other words, contribute in a significant way to firms planning to or not planning to invest in their business in Armenia in the next two years. The variables *UNSTABLE* and *UNINSURE* both have significant marginal effects on the probability of investment being planned by the firm during the next two years. The rest of the variables are proven to be insignificant and thus are not correlated with the dependent variable.

The parameter of the variable *UNSTABLE* is set up to 1 if the firm does not view Armenia as a stable economy. Thus in the context of the model, the coefficient of this variable shows how much the perceived instability in the economy affects the willingness to invest in the near future. The coefficient on *UNSTABLE is* negative as it was expected and is equal to -0.37 rounded to two decimal points. The p-value of the variable is .082 which suggests the variable is significant at slightly more than a 90% confidence level. As it was pointed out, the probability of planned investment can take any value from 0 to 1 which leads to the discussion of the marginal effect of perceived instability in the economy. This would indicate that, for a given firm, dissatisfaction with the economic stability will diminish the likelihood of an investment within 2 years by 37%. That is a very substantial relationship and indicates the importance of stability in the economy if one wants FDI to increase in Armenia.

The variable *UNINSURE* represents the inability of a firm to secure its assets through insurance. It also turned out to be significant, but at that 95% confidence level. This parameter estimate leads to a very interesting finding. As projected initially, the coefficient has a negative value amounting to marginal effect parameter estimate of -0.45. This suggests that the probability of investment by a firm is decreases by 45% if it does not feel it can protect its assets through insurance. This correlation points out the large demand for insurance that existed for foreign investors.

The other factors in the model do not appear to have a statistically significant impact on the 2-year investment plans of the firms interviewed. As was stated in the previous chapter, logit models cannot be tested for joint significance. However, they can be tested for accuracy by assessing the number of correctly predicted values. The model

predicted 0 correctly in 25.7% of all the observations. In addition, the values of 1 for the depended variable (the firm does plan to increase investment in Armenia in the next two years) were predicted correctly in 42.9% of all the observations. Consequently, the results of the model contained a number of false predictions which amounted to 31.4% of all observations. The model must also be checked for multicollinearity to test for mutual independence of explanatory variables. It is done by the VIF (Variance Inflation Factor) measure. It is equal to 1.029 in this model. A common rule of thumb for regression models is that multicollinearity is present if VIF>5 which is not the case with this model. The R-squared of 0.17 indicates that there is likely omitted-variable bias though the regressors clearly explain some of the variability in the dependent variable.

The next model is basically identical to the first one except the dependent variable represents the plans for investment in Armenia beyond two years. Essentially, the model attempts to examine factors which affect the plans for long-term investment by these companies in Armenia. The same explanatory variables are included in the model as before with the same set of observations. The results are presented in table 7. The Pseudo R-squared (0.175) is not much different from the one in the previous model. Therefore the VIF reveals the same conclusion that no multicollinearity is present. This indicates that some factors are clearly omitted from the model. However, the model notably fits the set of observations. It also has better accuracy than the first model because the model predicted a ) value for the dependent variable correctly in 48.6% of all the observations. The predictions of 1 were correct 31.4% of the time which adds up to an overall 80% accuracy rate for the predictions. The model reveals the statistical significance of two of its explanatory variables. The independent variable, *PROFIT*, is significant at a 95%

**Table 7. Parameter Estimates and Marginal Effects for the Logit Model Examining Characteristics That Affect Investment Plans after Two Years**

| | Pseudo $R^2$=.32 | | |
|---|---|---|---|
| Variable | Parameter Estimate | | Marginal Effect |
| *Constant* | .088<br>(1.22) | | .022<br>(.30) |
| *COST* | 1.33<br>(1.05) | | .31<br>(.22) * |
| *PROFIT* | .99<br>(.94)* | | .24<br>(.22) ** |
| *CLOSEBUS* | .93<br>(1.04) | | .23<br>(.25) |
| *UNSTABLE* | -1.65<br>(1.10) | | -.37<br>(.21) |
| *UNINSURE* | -1.95<br>(1.15) | | -.45<br>(.23) |
| *GOVTAKE* | -.98<br>(1.38) | | -.24<br>(.31) |
| *UNSATARM* | .72<br>(.89) | | .18<br>(.21) |
| *UNSATREG* | -1.04<br>(1.29) | | -.25<br>(.30) |
| Actual | Predicted value | | Total Actual |
| Value | 0 | 1 | |
| 0 | 17 | 4 | 21 |
| 1 | 3 | 11 | 14 |

*Note:* Standard Errors are in Parentheses
*Denotes Statistical Significance at the 10% level
**Denotes Statistical Significance at the 5% level

confidence level and has a positive marginal effect on the two-year investment plans. The p-value of the variable is minimal which talks about strong correlation between the past profitability of the company and its long-term plans to invest are closely correlated. The coefficient on the variable is approximately 0.59. This suggests that the company was profitable in the past, it increases the probability of long-term investment plans for the foreign firms in Armenia by 59%. This relationship was expected and the results make perfect sense.

The other variable that turned out to be significant was *COST*. However, as *COST* represents the perceived riskiness with regards to the cost of production, it was expected to have a negative impact on planned long-term investment. However, this is not the case in the model as the coefficient for *COST* is roughly equal to 0.39. However, it is significant only at a 90% confidence interval. Consequently, this relationship is not extremely strong statistically.

The strong correlation between the past profitability and investment plans brings about the need of identifying what affects the profitability of businesses in Armenia. The past profitability leads to expansion in investments for most of the firms. Thus finding out what affects profitability will indicate which factors support growth in FDI for companies and therefore trigger further investments. As a result, another model was run with profitability as the dependent variable and *COST*, *UNINSURE*, *UNSATARM*, *UNSTAREG*, *GOVTAKE* as the independent variables. The independent variable in this model basically represents a reduced form model of profitability based on supply and demand conditions for the companies.

The model has the same goodness of fit and variance inflation rate caused by roughly similar R-squared measure as the previous two models. The portion of correctly predicted values is roughly 78% of all the predictions.

The third model did not provide evidence for any correlation between profitability and the riskiness of production costs, *COST*, because the parameter estimate was insignificant. The model revealed two interesting relationships with past profitability (table 8). First, *UNINSURE* is suggested to have a marginal effect on the likelihood of a business to be profitable. The estimator is significant at a 90% confidence level. The model suggests that the unfulfilled need of insurance reduces the chances of profitability by 34% for a given firm in Armenia. This relationship was also significant in the first model where the two-year investment plans were studied. This implied that businesses that have less confidence in the ability to insure their assets are less likely to be profitable in the country.

Second, the other explanatory variable that was suggested to be significant by the model is *UNSTAREG*. The variable represents firms' dissatisfaction with the size of the market in the region around Armenia. The factor was not indicated by the previous models. However, it is significant with respect to profitability at a 95% confidence level. It suggests that firms that are dissatisfied with the regional market are less likely to have been profitable in the past. In other words, the lack of opportunities in the regional market is a major obstacle for a lot of firms in the country. This is very reasonable since many firms that took part in the survey are limited to the regional market. The other estimators of the model were not significant. This result for *UNSATREG* may indicate that these firms have been having difficulty in achieving low costs of production because

**Table 8. Parameter Estimates and Marginal Effects for the Logit Model Examining Characteristics That Affect the Past Profitability of Firms**

| | Pseudo $R^2$=.18 | | |
|---|---|---|---|
| Variable | Parameter Estimate | | Marginal Effect |
| *Constant* | 1.72<br>(.77) | | .35<br>(.12) |
| *COST* | -.03<br>(.91) | | -.01<br>(.18) |
| *UNINSURE* | -1.63<br>(.98)* | | -.35<br>(.20)* |
| *GOVTAKE* | .44<br>(1.43) | | .08<br>(.24) |
| *UNSATARM* | .39<br>(.92) | | .08<br>(.19) |
| *UNSATREG* | -2.05<br>(1.07)* | | -.46<br>(.22)** |
| Actual | Predicted Value | | Total Actual |
| Value | 0 | 1 | |
| 0 | 4 | 7 | 11 |
| 1 | 1 | 23 | 24 |

*Note:* Standard Errors are in Parentheses
*Denotes Statistical Significance at the 10% level
**Denotes Statistical Significance at the 5% level

they have not been able to expand their markets regionally enough to take advantage of economies of size that may exist in their production processes. This could affect profitability and be the reason for not being as profitable as other firms that are "sized right" for the regional market they are serving.

*Implications for Horticulture in Armenia*

Before starting any kind of discussion about the results of the study, it is important to make it clear that the firms which took part in the survey are the ones that have survived the Armenian market already. The survey was not able to involve investors that have failed to do business in Armenia or had their business fail in Armenia. Therefore the results of the survey ought to be analyzed taking into account that it has only studied the businesses that currently operate in the country. Therefore, there is some bias in the results which has affected the outcome.

By using the secondary data in the previous chapters, it was pointed out that Armenia has a potential of growth in its horticulture industry. Previous studies have identified that horticultural products from Armenia can become more competitive in the region if necessary improvement takes place in the sector. In addition to that, it was discovered that FDI can be a very efficient method of achieving improvement in agriculture. The results from the survey will help to determine the investment environment in Armenia. It is very important to find what have been the biggest challenges for the investors and how they have battled the problems that came on their way.

It will be reasonable to start the discussion with analyzing the economic factors that are characterized as risky by the investors. The investors were not very critical about the regulations and laws imposed by the government. Although many of the companies have indicated that improvement with regards to regulating firms could solve a lot of problems, they didn't see it as the primary concern for the most part. However, pure economic factors such as transportation, production and labor did pose significant challenges for the investors. Clearly, Armenia is a landlocked country and has closed borders with two of its neighbors. To be clearer, these two neighbors are Turkey and Azerbaijan which are the relatively more developed and wealthier nations among all the neighbors. Therefore, the question of transportation is of concern for firms who export or import goods. The other risk that was mentioned by many respondents was production risk which is very often associated with the lack of equipment or labor in place. Some firms are not capable of incurring such costs and thus face challenges down the road. Some firms have also had difficulties finding sufficient labor. Some sectors lack cutting-edge experts because the knowledge dispensed by Armenian colleges in that field is quite obsolete. For instance, the Agricultural State University of Yerevan has very outdated equipment and material for students. As a result, the agricultural sector doesn't have sufficient experts. There are other areas of the economy that are facing the same problem. As it was also discovered, the majority of firms in Armenia with FDI hire primarily Armenians because local labor is very cheap. Thus, a lot of firms choose to hire local experts who are not as qualified but are much cheaper. This may create a problem of inefficiencies. Firm are ought to weigh the benefits they can gain from well-qualified

labor. In some cases, the cost is not the main factor and knowledge as well as skills can produce competitive advantage.

Many foreign companies have also run into problems such as monopolies, corruption among top government officials, uneven access to information, etc. All of these conditions bring about the question of openness of the economy. Over half of the investors are not satisfied with the openness of the economy. Partially, this is due to the problem of privileges for certain families or individuals. Besides, post-entry restrictions including the fiscal system have had a negative effect on the investors. Several respondents even stated that there is not enough intervention from the government to support small businesses. In other words, the government fails to support small businesses but is always there to protect big businessmen, or at least that is a broadly-held perception on the part of the companies that were interviewed for this study.

It was mentioned earlier, that regulations and laws were not perceived by businesses as very risky in terms of their effects on doing business in Armenia. However, the regulations that are implemented by the government were not very satisfactory. Many investors stated that the spread of corruption and incompetence of government officials is a serious problem. The majority of firms did not think it was possible to conduct business openly and honestly in Armenia. Although corruption is not considered to be to the extent where firms are threatened by organized crime in form of confiscation, corruption does occur in Armenia.

The insurance industry is not very developed in Armenia according to the interviewed investors. Many of them mentioned that they were not able to safely insure their assets. This may be of serious concern for the farmers and growers who use

insurance services quite often in developed countries. Given the fact that subsidies are not a common feature in Armenia, insurance services could be more necessary.

One of the main goals of the survey was to examine the factors affecting investors' decisions to expand their businesses in Armenia. The discussion proceeded to analyzing the factors that do or do not affect the investment plans of firms with FDI in Armenia. After analyzing the drivers and obstacles to the decision to invest, an attempt will be made to identify the type of firms that are more successful in Armenia than others. This will be supported by the results from the logit model as well as the analysis of statistical frequencies.

As outlined earlier in the results, more than half of the interviewed businesses are planning to expand investment in Armenia in the next few years. However, what the econometric model suggests is that very few of the initially expected factors play roles in that decision. Factors such as political threat, ethics or restrictions do not act as significant aspects in the decision making. Although the malfunction and incompetence of the governmental system was pointed out by many investors, those factors do not appear to have any impact statistically on the investors' willingness to expand through additional planned investment. None of the three estimated logit models show any relationship between the investors' perception of any of those issues and their willingness to increase or decrease the investment. The factors that seem to have the most impact on these decisions are not tied to corruption, the fiscal system, or other functions of the government. So, how is it that investors are aware of all these problems and yet it does not affect their decision on whether or not to invest?

The survey interviewed the companies that have been able to succeed in the Armenian economy. The ones that have failed were not represented in this study. The absence of correlation described above can only be explained by the fact that businesses that have succeeded in Armenia have somehow learned how to deal with the particular system which exists there. Firms that have the opportunity to make profit must able to handle the corruption, incompetence of government officials and problems of this nature. This was also sensed when talking to the actual business owners. Many of them have established relationships with the government officials, politicians, and tax collectors. This is also supported by the fact that the initial contacts made before making investments in Armenia initially were made with individuals that either knew the system very well or were a part of it. However what is critical for investors is economic and business risk that can affect the supply and the demand. Instability in the economy does play a role in the plans to invest or not in the next 2 years. The acknowledgment of instability in the economy may stop investors from investing as it may affect the supply and demand for a given product. In case of an unstable economy, problems such as rising prices on inputs or unemployment may occur which would hurt anticipated sales and consequently expected profits. That being said, investing in Armenia can be rather risky in the near future because about 83% of the current investors acknowledge the economic instability in the country.

The ability to protect business operations through insurance is also important for foreign investors. Unlike the businessmen in post-Soviet countries, Western investors are used to dealing with asset protection through insurance and thus the absence of it may be a problem. In addition, the insurance sector in Armenia is going through a process of

reforms and many are not optimistic about the final outcome for the sector. As it turns out, about 35% of the respondents see protection through insurance as a problem.

Past profitability appears to have a very strong effect on the decision to increase invests in Armenia beyond the time horizon of two years. Clearly, firms that have not been able to grow in their profitability are unlikely to invest more in Armenia than they have already. On the other hand, firms that have had growth in their profitability have incentives to expand. Therefore, it made sense to find out what factors affect firms that are profitable. That analysis revealed the correlation between the decision to invest and factors that affect the profitability. It was discovered that firms are likely to be profitable if they are not concerned with insurance coverage and if they are satisfied with the size of the regional market. The causality behind the insurance aspect has already been discussed. Nevertheless, it is interesting that the insurance aspect also affects the probability of the past performance. It is important to mention that it is only with respect to firms that need insurance for their operations.

The other interesting finding that the model reveals is the importance of market size for the companies that export in the region. Very often, the decision to invest in Armenia is tied to the possibility to enter international markets. It is important not only to be present in foreign markets but also to be competitive. Because Armenia, by itself, is a small country with a relatively small population, the ability to compete in the region is crucial for many firms, probably because of economies of size issues. Additionally, the absence of demand for a given product internationally can be critical for an investor and could potentially lead to failure. When conducting the interviews, it was also discovered that some firms do not focus on the Armenian market which explains why the discontent

with the local market size does not play a big role. That is why about 58% of the investors were not satisfied with the market in Armenia and only 22% with the regional.

In terms of the prospective in the horticulture sector of Armenia, the implications of the results are not much different. The absence of strong government programs that support farmers and growers combined with weak the insurance sector in Armenia may pose some challenges for foreign investors. However, the regional and local markets are sizeable which create large opportunities for exporters. This question will be further elaborated in the next section.

*Conclusion*

By performing research on the agricultural sector of Armenia, this thesis succeeded in determining the main challenges that farmers and growers are faced with in Armenia. In addition, potential solutions to these issues were also studied and discussed in this paper. The examination of the past experience of existing foreign firms in Armenia revealed interesting results. The results of the survey led to a few discussions about the current investment climate in Armenia. The logit models, though not very strong (due to a small number of observations), brought about significant factors that affect FDI in Armenia. The final results from the survey allowed making recommendations to the future foreign investors about the topic.

In general, the experience of foreign firms in Armenia has been mixed. The investors have pointed out clear challenges such as transportation, economic instability, hardships relating to protecting assets with insurance, limited market size, etc. The overall investment environment appears to be functional. The majority of sizeable

companies were started by foreign investors. The government does provide some freedom and safety for the investors especially for the bigger companies.

Personal connections appear to play a significant role in the success of companies in Armenia. Given the culture and the stage of the development specific to Armenia, personal networking is needed if not compulsory in many situations. Learning the methods of dealing with people and the government is crucial. Hoping to enforce the western culture and the ways of doing business may be full of different kinds of problems.

The horticultural sector has a potential to grow and be competitive in the foreign markets. However, the practice of investments in the cultivation element of horticulture has not been common. Orchards and fields are mainly owned and operated by locals although advancements could be achieved if more capital flows into that area. The firms that process food are more advanced and have also been exposed to more foreign investment than other types of firms in Armenia. Nevertheless, the instability of the economy is a serious challenge for the horticulture sector because the cost of production is not stable. To conclude, there are opportunities to invest in the horticulture sector of Armenia though the possibility of facing serious challenges must be considered.

# CONCLUSIONS AND RECOMMENDATIONS

## *Conclusions*

As discussed in the literature review and the methodology chapters of this thesis, the horticultural sector of Armenia has a serious potential to prosper. In general, the agricultural sector in Armenia has the ability to improve and support the local economy better than it currently is. If proper initiatives are taken, the development in the sector can be triggered and positive results will be achieved. There has not been much foreign investment in Armenia's horticulture sector even though firms in other industries have been substantially financed and managed by foreign investors. The research of secondary data also showed that other countries in the same development stage as Armenia have achieved solid economic progress by attracting and incurring FDI. This has occurred in various industries in these other countries including agriculture. The goal of this study, was to evaluate the prospects for Armenia to draw FDI into the economy and into the horticultural sector more specifically. The survey helped to assess the business environment by studying the experience of foreign firms that have already invested in Armenia.

Based on the survey, the experience of foreign firms in Armenia has varied in many ways. However, the study was able to draw some general conclusions based on the stated experiences of the firms involved in the survey. A number of firms in various industries in Armenia, including agriculture, have been started by foreign investors. Many of these firms have had success and plan on expanding their operations in Armenia. However, the experience of the firms that have failed in Armenia was not

studied and thus these experiences are not represented by the results discussed earlier in the thesis.

A number of problems were brought up by the interviewed investors. The main concerns of investors in Armenia had to do with pure business risk. Although issues such as incompetence and corruption among government officials did exist, they did not appear to have a strong impact on the plans to invest. According to investors, in Armenia there are substantial risks associated with economic instability, the size of the local and regional markets, and the ability to protect their assets.

Economic stability is very critical for businesses of all fields. It affects the supply and demand of goods in any sector. Since the global crisis beginning in 2008, Armenia transitioned to a phase of recession combined with skepticism about the future of the economy. According to the CIA fact book, the inflation rate rose to 8.2% in 2010 which hurt businesses in all sectors of the economy. High inflation generated an economic downturn in Armenia which forced many of firms out of business. Therefore, as long as the economy remains unstable, it will be more or less risky to invest in Armenia. Nevertheless, many firms have been able to battle the severe economic situation and still remain profitable. Moreover, some of the firms that participated in the survey were started after the global crisis.

A lot of firms that invest in Armenia target only the local or the regional market. There are foreign firms in Armenia which sell their products world-wide but that is not very common. Given the geopolitical location of Armenia, transportation of products has posed serious challenges for firms. That is why many firms are limited to supplying their

products in the country or the region surrounding Armenia. For those firms, the size of the regional market which builds the demand for a given product is very important.

Foreign investors in Armenia are also concerned about their ability to protect their assets in case of sudden, unforeseen, negative events. The government does not provide much support in times of catastrophic events. In addition, the judicial system is very weak. As a result, firms and investors are hoping for the private sector to cover those risks. The situation is aggravated as the insurance sector is only in the early stages of development. It has encountered a series of reforms and changes which has raised many questions among businessmen. That is why many investors are worried about the insurance issue. Their plans to expand the investment are, thus, dependent on the developments in the sector insurance.

The factors outlined above are not the only issues that investors identified relative to their investment experiences in Armenia in the past and their plans to invest there in the future. However, when it comes to the decision to invest there are major factor like insurance that are the issues that appear to make a difference with investors. For instance, the vast majority of investors argue that it is extremely difficult to conduct business honestly and openly in Armenia. However, this factor does not matter in terms of the decision to expand. Similarly, corruption and incompetent government are obvious problems to many investors but it does not affect their profitability or willingness to invest in the future. These would be obvious problems for businessmen in western countries. Nevertheless, these investors appear to have found ways to do business in Armenia so they are not much affected by such factors.

Further research could be done to evaluate the strength of the Armenian economy. As far as investments are concerned, the horticultural sector should be of one sector of interest. Being a small country in terms of land, Armenia has a number of high quality agricultural resources such as grapes, apricots, peaches, etc. It is also famous for processed fruit products such as dried fruits and has already exported a lot of these products. Despite the clear potential, the growers in Armenia have faced problems such as financial hardship associated with buying fertilizer and the inability to be equipped with up-to date technology. All these factors hurt agricultural productivity and thus the profitability of these companies (Haykazyan and Pretty 2006). This study suggests that those problems could be somewhat alleviated if FDI are directed to that sector. It could be a possible solution as FDI brings additional capital to markets and very often solves productivity issues in developing countries. As previously brought stated, FDI can be a very efficient instrument in improving productivity in agriculture, particularly in developing countries (Msuya 2007).

*Recommendations*

Networking**.** The results of the survey revealed that foreign companies that are successful in Armenia have some built-up network(s) in the country. They are either connected to an individual or an organization that can open doors for them in Armenia. These individual and the organizations mainly help foreign companies considering investing in Armenia with organizing the business in a given sector. After interviewing foreign investors, it became clear how much they value the networking aspect of business in Armenia. A lot of initiatives and projects would have been more difficult if not the support from certain individuals or organizations.

It is highly advisable for foreign investors to have very strong connections in Armenia when making the decision to invest as well as after the establishment of operations. The contacts in the sector or the government are very helpful as authorities may solve many issues much easier and quicker than other institutions such as the Armenia legal system. Besides, when planning to invest in Armenia, the trusted individuals can provide the best insights about the best opportunities as well as the threats that exist in different Armenian industries. They may also provide valuable information that is not available for the public. Foreign Investors must bear in mind that it has only been 20 years since the separation of Armenia from the USSR and people have a different mindset than in the West when it comes to doing business. Personal relationships play a big role and can help in solving very important issues.

Willingness to adapt to the system**.** It is extremely important for investors to understand how the system works in Armenia. Actions may not work the way they are outlined by Armenian law or legislation. Armenia still has corruption in nearly every sector of the government. Before making the decision to invest in Armenia, investors must clearly realize that the legal system and institutions are not very strong in the country. The set of ethics and values is different from the ones in the western world, thus misunderstandings may occur. Investors are very likely to be faced with injustice and discrimination. Investors should expect dealing with corrupt tax collectors or government officials. However, these factors don’t necessarily lead to failure. Investors from a variety of countries have been able to fit into the system and produce competitive products and services in many industries of the economy including agriculture.

Investors should also pay attention to the culture and try to learn about it and how to function in it. People in Armenia in general value personal relationships and thus following the cultural rules could benefit the investor. For instance, managing employees is done in a different way than in western countries. The approaches in management are quite different thus recruitment of the appropriate managers is critical.

Be aware of economic risks. The existing economic risks were discussed in the Results and Analysis section. Pure economic and business risks turned out to be the most significant factors in terms of future investment plans for existing investors. The past instability in the economy may also pose problems for investors. Prices on inputs have been hiking for the past three years. Inflation risk is high and investors must be aware of this issue. Armenia is a landlocked country which creates a dependence on neighboring countries in terms of transportation. This is another threat for businesses that plan on importing or exporting goods. In other words, investors must bear in mind the possibility of instability in the economy caused by politics as well.

The population of Armenia is not very large. In addition, it does not have open borders with its more developed two neighbors Turkey and Azerbaijan. As a result, it is left with two neighbors that are not politically stable in is left in a land-locked condition. This substantially hurts the demand for Armenian products. The only economically strong nation in close proximity to Armenia is Russia and that is where most of the demand comes from for Armenian exported goods. Thus, as an investor, it is critical to acknowledge the size of the local and regional markets, understand the difficulties that are associated with that and be able to conduct proper market research. As it turned out,

this research revealed that the size of the regional market does affect the profitability of foreign firms that are currently in Armenia.

Research the horticultural products and their specifics in Armenia. The potential of horticultural products in Armenia was discussed to some extent in this thesis. As a result, it was determined that some fruits and vegetables are very competitive in the market. However, further research is needed to examine the threats and opportunities for growing a given commodity in the country. The investor would need to study the production patterns to determine these risks. Also, it is very important that the investor put effort and time into finding good land because the quality of soil varies significantly from one area to another in Armenia. The other aspect of production that also needs to be addressed is the seasonal patterns for a given product. These are just examples of production factors that an investor must take into account when investing in the horticultural sector of Armenia.

What might be even more critical is the assessment of the market. An in-depth market research study must be conducted to identify the demand for a given commodity in the local and regional markets. The major buyers of the produced commodity would need to be identified and analyzed. The investors must also conduct a very detailed price analysis to prevent problems with selling the product. Additionally, the investor is advised to identify the ways that the product will be supplied to the targeted market. Given the geographical location, this might be an issue too. To wrap up, a very thorough market research study is necessary to assure the success of a company investing in Armenia.

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# APPENDIX

**Appendix A**
**The Questionnaire**

1. How would you classify the form of investment your firm operates?
    a. Greenfield
    b. acquisition
    c. joint ventures
    d. alliances
    e. subcontracting
    f. licensing
    g. other (please specify) _____

2. What were the reasons you moved your operations/invested in Armenia?

3. How long has your company been doing business in Armenia?

4. How much risk has your company has encountered while working in Armenia from each of the following? (If your major sources of risk are not listed, please add them to other.

| | **no risk** | **some risk** | **moderate risk** | **risky** | **very risky** |
|---|---|---|---|---|---|
| foreign trade restrictions | | | | | |
| firm entry restrictions | | | | | |
| post-entry restrictions | | | | | |
| production factors | | | | | |
| transportation factors | | | | | |
| cost factors | | | | | |
| labor | | | | | |
| other (please specify) _____ | | | | | |

5. How would you evaluate the level of economic stability in Armenia?

Very Unstable Neutral Very Stable

1 2 3 4 5 6 7

6. Are you satisfied with size of the market depending on the scope of your operations?

| | | | |
|---|---|---|---|
| Armenia: | Not Satisfied | Neutral | Very Satisfied |
| Region: | Not Satisfied | Neutral | Very Satisfied |
| Global: | Not Satisfied | Neutral | Very Satisfied |

7. When your company began operating in Armenia, what technical skills related to your company were the most difficult to find?
   a. _____
   b. _____
   c. _____

8. What types of skills and training related to your business would you like to see expanded in Armenia?
   a._____
   b. _____
   c. _____

9. How would you describe the difficulty of finding sufficient employees for operations in Armenia?

| Very Difficult | | | Neutral | | | Very Easy |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

10. At first, did you encounter difficulties entering the Armenian market?
    a. Yes
    b. No

    If yes, then please describe these difficulties

    _____

    _____

    _____

11. Does your company operate in countries other than Armenia?
    a. Yes (go to question 12)
    b. No (go to question 14)

12. What are the other countries that your company operates in?
    a. _____
    b. _____
    c. _____
    d. _____
    e. _____
    f. _____

13. How would you rate the difficulty of doing business in Armenia compared to other countries in the region?

| | Much more Difficult | | | Neutral | | | Much Easier | |
|---|---|---|---|---|---|---|---|---|
| Than Turkey? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Uncertain |
| Than Azerbaijan? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Uncertain |
| Than Georgia? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Uncertain |
| Than Iran? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Uncertain |
| Than Russia? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Uncertain |

14. What are some things that make it more difficult to do business in Armenia than other countries?
    a. _____
    b. _____
    c. _____

15. How would you evaluate the openness of the Armenian economy?

| Completely Closed | | | Neutral | | | Very Open |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

16. What is your perception about the ability to protect of your investments in Armenia in terms of factors other than normal competition?

    Availability to protect through insurance

    | No protection | | | Neutral | | | Very Protected |
    |---|---|---|---|---|---|---|
    | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

    Political threats

    | No protection | | | Neutral | | | Very Protected |
    |---|---|---|---|---|---|---|
    | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

    Threat of Confiscation

    | No protection | | | Neutral | | | Very Protected |
    |---|---|---|---|---|---|---|
    | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

17. In which country is your company headquartered?

18. How many people do you currently employ in Armenia?
    a. Fewer than 50
    b. 50-300
    c. 300-1000
    d. 1000-3000
    e. more than 3000

19. What percentage of employees from Question 21 are citizens of Armenia?

20. How did you make your initial contacts when considering opening operations in Armenia?
    a. Public organization
    b. NGO
    c. partner company
    d. individual
    e. customer
    f. other (please specify)

    _____

21. What percentage of your company's total revenue comes from operations in Armenia?
    a. Less than 10%
    b. 10-35%
    c. 36-50%
    d. 51-75%
    e. 75-89%,
    f. 100%

22. Have your operations in Armenia grown (in terms of profit) during the past two years?
    a. Yes
    b. No

23. How would you evaluate the protection of patents and intellectual property right in Armenia?

| No protection | | | Neutral | | | Very Protected |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

24. If there were one thing the government could do to improve the economic environment, in Armenia what would it be?

_____

_____

25. How would you describe the ability to conduct business honestly and openly in Armenia?

| Extremely Difficult | | | Neutral | | | Very Easy |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

26. What is the level of your annual sales in Armenia?
    a. Less than 20,000,000 AMD
    b. 20,000,000-50,000,000 AMD
    c. 50,000,000-250,000,000 AMD
    d. 250,000,000-1,000,000,000 AMD
    e. More than 1,000,000,000 AMD

27. Does your company anticipate a growth in its investments in Armenia?

    Within Two Years

    a. Yes
    b. No

    After Two Years

    a. Yes
    b. No

28. What is the primary industry for your operations/investment in Armenia?