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WARSAW SCHOOL OF ECONOMICS

Master's Studies

Field of studies: International Business (MA)

Specialisation: Business in Central and Eastern Europe

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Understanding Gold: How Dynamics of Gold Influence Jewellery Market in Turkey

Master's thesis

Written in the Institute of International
Management and Marketing

COLLEGIUM OF WORLD ECONOMY

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Warsaw 2019

Summary

Gold has been always a precious and valuable source of wealth in economies. The use of gold, from past to present, vary from different characteristics and traditions in history. As the main reasons of gold's long-lasting success are its chemical features that makes gold easily rolled, embossed, engraved and poured and economical features that allows gold to have an advantage against demand and supply as well as usage as a saving tool and jewellery products lead the gold becomes an intensive and valuable saving tool for centuries.

At the present time, global jewellery industry is in the lead of world gold production as 53% of the world annual gold demand was covered for jewellery and ornaments production with 2.135 tonnes and about half of the gold extracted from reserves exists in the form of jewellery. Also, central banks and other official organizations are leading the gold demand. Due to the steady increase in gold prices in the world and the assurance of gold as a means of saving money, the demand for jewellery has continuously increased.

Turkey is among the top five gold markets in the world in terms of market size and country is among the top three countries in terms of jewellery production. In the Turkish economy, gold is a matter of priority in terms of wealth accumulation, investment and as being an important saving tool. Turkey's interaction with gold is sustained by an intimate cultural and traditional heritage. Gold plays a significant role among the Turkish society and their lifestyle within the early roots of customs and traditions.

The aim of the work is to prove, using reports findings and statistical data that gold plays the key role for nations' economical course of events and is of crucial importance for the Turkish economy and Turkey's ability of keeping its steady position in the global jewellery market and ability of challenging with the unstable social, political and economic environment which results fluctuant gold prices. Turkish jewellery industry, which is ranked among the top industries globally and showing steady increases in terms of jewellery exports, has been selected for the main focus with both local and international published data.

In the **first chapter**, the characteristics and usage areas of gold, golden monetary and non-monetary materials are described by considering the published data. Secondly, historical

progress of the role of gold is discussed in terms of civilizations success and antiquity. Then, the supply and demand characteristics of the gold and gold materials are evaluated by considering the statistical data.

In the **second chapter**, the jewellery industry in Turkey is defined and characterised according to the data derived from explanatory articles, reports of worldwide institutions and chambers of jewellery and other related institutions from Turkey. Secondly, the role of this branch in the economy is discussed in terms of various aspects such as size and product variability. Then, the supply and demand characteristics of the industry are determined by considering the published data and the import and export figures are explained through the most recent statistics.

In the **third chapter**, figures for gold price trends and historical price change are defined and characterised, according to the most recently released reports which are concentrating on the contributing factors and specific events occurred in the world financial sphere. Secondly, changing gold prices are analyzed through the effects on the Turkish jewellery market. Then, governmental actions taken in the light of the jewellery industry in Turkey are explained.

In conclusions, economic, political, societal, and technological aspects of the role of gold market and jewellery industry are given, as the most important facts which sustain countries at a steady position in the global economy. Also, the global balances of international jewellery trade implied as remaining in the same direction which also makes the historical approach of the gold important. Moreover, it is crucially implied the accurate understanding of chronological development of the use of gold and its impact on the overall development for nations are essential for potentiate gold economy and jewellery industry in countries, more specifically in Turkey.

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Chapter 1: Gold in Today's World Economy

In this chapter, firstly, the specifications, features of gold are explained, industrial and market-based fields of use of gold are defined and golden monetary and non-monetary assets are tried to be figured by evaluating the published data. Secondly, gold will be taken into consideration in terms of its historical progress within the successful civilizations of processing and antiquity. Then, the supply and demand features of the gold and gold materials will be discussed by considering the published reports and essential indicators from published reports.

1. Characteristics of Gold

There are important materials or mines found in nature which have always been valuable and have succeeded in keeping their value historically, forcibly and worldwide. Gold has always been an exemplary material that can fit perfectly into this situation. Almost in every stage of humankind, gold has played an intensive role in the development of an enormous number of civilizations, their economics, politics and arts. Distinctly, gold is one of the oldest and the most precious metals that don't disappear for centuries with its bright yellow appearance (Michelet & Toste, 2014). The bright yellow colour of gold has influenced people for centuries with its features such as being pure in nature and easy processing.

Characteristics of gold, definitively, is declared as chemically and physically by scientists, scholars, historians and business professionals within its main features. Michelet and Toste (2014) give us solid and compacted information about chemical and physical characteristics of gold on:

" Au, the chemical symbol for gold, derives from the Latin word aurum. Gold has a bright yellow colour and is found in its native form as a single stable isotope. It is a transition metal of electronic configuration [Xe] 4f¹⁴ 5d¹⁰ 6s¹, atomic number 79, and atomic weight 197. It belongs along with copper and silver to group 11 of the periodical table of elements. Gold possesses an electronegativity (2.54) which is close to that of carbon (2.55). It is the most malleable and ductile of metals, melts at 1,064 °C, and boils at 2,808 °C. It is also

among the densest metals with a specific gravity of 19.3 and possesses high heat and electrical conductivities (respectively $317 \text{ W.m}^{-1}\text{.K}^{-1}$ and $45.2 \times 10^6 \text{ S.m}^{-1}$). ”

Gold can be easily rolled, embossed, engraved and poured. It is known as the softest and most easily machined metal among other metals. Silver and copper have the highest electrical conductivity after gold. It doesn't easily affect by a chemical reaction. Additionally, it is resistant to acids and stays unaffected by air and water. It can be only solved in "aqua regia" and can be easily reduced to the metal form from all other compounds (Ünal et al., 2016). Table 1.1 shows the chemical and physical characteristics of gold.

Table 1.1: Chemical Characteristics of Gold

Chemical Symbol	"Au" ("Aurum" in Latin)
Atomic Number	79
Atomic Weight	197
Melting Point	1064°C
Boiling Point	2856°C
Gravity Point	19.3 g/cm ³
Electronic Configuration	[Xe] 4f ¹⁴ 5d ¹⁰ 6s ¹
High Heat and Electrical Conductivities	317 W.m ⁻¹ .K ⁻¹ and 45.2 ×10 ⁶ S.m ⁻¹

Based on: *Gold Catalysis: An Homogeneous Approach* (Michelet & Toste, 2014).

Gold is explained as allochromatic, changing colours of gold that are obtained by adding different metals to the alloy. For example; an addition of silver to the alloy causes gold change-over its colour to green. Addition of nickel and platinum to the alloy causes gold change-over its colour to white. Addition of zinc causes gold change-over its colour to yellow and addition of copper, gives the colours ranging from yellow to red according to the amount of use. The purest gold found in nature is 999,9 purity as 100% pure gold is not existed naturally (Ünal et al., 2016).

The purity of gold in chemistry is expressed in percentages and the purity of gold in the jewellery industry is expressed in “karat” terms. According to this, 24 karat gold is equivalent

to 100% purity and 22 karat gold is equivalent to 91.6% purity. 18 karat gold is equivalent to 75% purity and 14 karat gold is equivalent to 58.5% purity (Ünal et al., 2016).

In terms of purity of native gold, unrefined and refined gold is expressed according to the gold term, “Fineness” which means gold content in parts per thousand. As an example, a gold nugget that includes 885 parts of pure gold and 115 parts of other metals, such as silver and copper, is determined 885-fine. In this manner, karat explains the ratio of solid gold in an alloy considered on a total mean of 24 parts (United States Geological Survey, n.d.). Table 1.2 shows the gold karat and degree of purity chart (Türkiye Cumhuriyeti Milli Eğitim Bakanlığı, 2011).

Table 1.2: Gold Karat and Degree of Purity of Gold

Karat	Degree of Purity	Karat	Degree of Purity
24 Karat	1000	12 Karat	499,92
23 Karat	958,18	11 Karat	458,26
22 Karat	916	10 Karat	416,6
21 Karat	874,86	9 Karat	374,94
20 Karat	833,2	8 Karat	333
19 Karat	791,54	97 Karat	291,62
18 Karat	750	6 Karat	249,96
17 Karat	708,22	5 Karat	208,3
16 Karat	666,56	4 Karat	166,64
15 Karat	624,9	3 Karat	124,98
14 Karat	585	2 Karat	83,32
13 Karat	541,58	1 Karat	41,66

Based on: *Kuyumculuk Teknolojisi Alaşım Metal Oranları* (Türkiye Cumhuriyeti Milli Eğitim Bakanlığı, 2011).

Geologically, gold is rare on the earth and exists in the various type of rocks and environmental formation. The existence of gold is explained by two types of geological deposits namely "lode" and "placer" deposits. Initially, gold is deposited in lode deposit with mineral in the rock which generally 2 to 5 miles deep from the surface. On the other hand, placer deposits are caused by natural erosion and degradation of the lode deposits- gold containing rock.

Additionally, gold is overpowered to weathering and dissolving from the gold-bearing rocks, allow the gold to be obtained as metallic particles (United States Geological Survey, n.d.).

Market-specifically, the existence of various gold prices in the markets lead the requirement of setting a standardised price for gold which is explained as “ounce” currency that sets the conversion of gold to US Dollar. Simply, current “ounce” prices are multiplied to the current US Dollar currency of that market and divided to the fixed value of “ounce” which is 31,10 gr. for assessing the purest 24 karat gold prices in that market (Öztürk, n.d.).

2. History of Gold

As the earliest gold producers in the world are Egyptians, they started to take out gold from the soil which was alloyed with copper in 5000BC. Also, the first document of mining was found as a map of gold mine in ancient Egypt. In another continent of the world, the Americas, traces of gold jewellery and ornaments from 2000BC were found in Peru as well as Aztecs and Incas are two well-known civilizations which were very passionate to gold in that era. Other ancient civilizations which attached importance to gold are the Greeks, Persians, Macedonians, Assyrians, Sumerians and Lydians (Ünal et al., 2016).

2.1. Egypt

Determining which civilization entitled first use of gold is presumed to 7000 years ago is in ancient Egypt. As they are the oldest gold producer civilization in the world, they extracted gold, which was alloyed with copper, from the ground in 5000 BC. In addition, the first document of history of mining is a map of gold mine in Ancient Egypt (Ünal et al., 2016). The devastating qualities of gold that made it very treasurable material in the market of that period and art were appreciated by the ancient Egyptians from the earliest historical times. There are some shreds of evidence that gold was used in objects, part of objects and as an item of jewellery and ornaments (James, 1972).

From old circumstances to the present day, gold has been esteemed by Egyptians as they were the main gold-producing nation in ancient times. In the ancient Egyptian language, gold means "Nubia" main gold area, where Egyptian mining was well constructed in 1300BC. There were in excess of 100 mines in the area. Nubia was protected by a series of troops very carefully in order to ensure the flow of gold through very rich trade directions. Egypt became the superpower in the area due to having the most productive gold-filled treasury of the ancient era (Habashi, 2016).

In the Ancient Egypt prevalent mastery of gold was used and put into practice as wired and beaten gold which was implemented to small objects and vessels. Especially, tombs of this early period reveal the quality of techniques as well as remonstrates Egyptians understanding of the possible uses of gold in ancient times. Gold was tried as foil and plaque to cover the small objects and vessels which the equipment of this mastery of techniques was discovered in the tomb of King Tutankhamun who died in about 1300BC (James, 1972).

2.2. Lydia

Lydians, were an Anatolian civilization living in Lydia, have been arousing the most attractive interest in history due to their successful use of gold and continuous rise of wealth. Its location on the trade route allowed Lydia to be at the heart of eastern and western cultures as well as providing a substantial wealth for their civilization. It is determined that the main source of Lydian wealth was efficient gold fields located at the capital city of Sardes (Yükçü and Atağan, 2011).

The large gold refinery in Sardes, capital of Lydia, was discovered by archaeologists in 1968. Archaeological shreds of evidence show that the important part of the pure gold was obtained from this refinery and used for the first fixed-purity gold coins publication in the history in 580BC. Sardes gold mine was the most important jewellery centre of that era within it's a gold mine, gold refinery and jewellery and ornamental workshops (Türe, cited in Yükçü and Atağan, 2011).

Lydian activities of gold and jewellery was also a milestone in the monetary history as it was determined that they were the first civilization which used money produced from gold and other precious metals. Although there is not enough evidence about which civilization discovered the use of money in history, for the first time, Lydians invented the usage of money that produced from precious metals. In history, Lydians are the first civilization which used gold and silver coins as well as calculated the value of the goods for money (Tekin, cited in Yükçü and Atağan, 2011).

2.3. Roman Period

Gold was used for the production of Hellenistic and Greek jewellery as well as golden coins during the Roman period. The earliest use of gold coins in the Roman period is determined in the 3rd Century which was published as the highest purity of gold, 24 karat (Tekin, cited in Gökalp, 2009). Byzantine monetary standard was based on the early assumptions that the value of a gold coin was equivalent to the amount of mineral that was contained in the bullion. Therefore, even six centuries after the emergence of first gold money has the same weight and highest purity of gold (Hendy, cited in Gökalp, 2009).

Ancient jewellery of Roman period set a good example of its gold and the use of gold had been precious in history with its rarity and inimitability. The existence of Greek and Roman gold coins and jewellery once kept in ancient treasuries but not all of them is possible to access today. However, the documents and historical findings reveal the value placed on the used metals and the special uses of them (Oliver, n.d.). Today some of the unique examples, true gold masterpieces, have been exhibited by The Metropolitan Museum of Art in New York with the range and varying influence of Greek and Roman jewellery.

2.4. Turkic Dynasties and Ottoman Empire

Gold in Turkic dynasties; used as a state and monarchy symbol. Turks have been playing an important role in gold processing and mining. They used gold for producing ornaments, rings, earrings, goldsmiths and spears. However, after the adoption of Islam, the

production of gold jewellery was decreased. They used gold as ornaments and jewellery (Ünal et al., 2016).

The tradition of Turkish gold jewellery production is rooted 5000 years ago and all the civilizations that lived in Anatolia created many gold jewellery for religious and aesthetic purpose. However, the use of gold and the art of jewellery gained importance in Istanbul with the development and refinement of the Ottoman Empire. In the 16th century, during the reign of Sultan Suleyman, Istanbul became one of the most important jewellery centres of the world (Türkiye Cumhuriyeti Ekonomi Bakanlığı, 2017). The production of gold jewellery has been concentrated in "Grand Bazaar" the first indoor shopping centre of the world, established in 1467 (Doğu Akdeniz Kalkınma Ajansı, 2015).

2.5. Gold Standard

Considering today's commercial conditions, the gold rush in California and Australia are considered as pioneer incidents for the beginning of gold mining. More recently, while gold had been used as a store of value and as a means of payment since ancient times, the international gold standard adopted by the United States from 1879 to 1933. Adoption of gold convertibility law in the 1870s arose the new definition for the monetary system which strictly legislated gold as a standard monetary tool and eliminated silver (Elwell, 2011).

Formally, with the adoption of the Gold Standard Act of 1900 by the United States, conversion of the bimetallic and silver standard monetary system of most countries had changed into the use of gold as a basis for the currency (Cooper, 1982). Prerequisites of the great depression in the 1930s lead countries to take action for their economies and forced countries to appeal competitive devaluations in the shortening world market. Additionally, several mistakes in implementing the gold standard led to damaged economic relations among countries. Therefore, world trade and production became distressed (Öztürk, n.d.).

2.6. Bretton Woods

More recently, during World War II, many countries suffered a great loss. Consequences of this giant war caused great confusion in international, financial and

monetary relations and resulted in the destruction of European nations' economies which reduced the production capacity of the countries in the continent. Many countries had been aiming to overcome these effects of the World War II in a short time and made the transition to the liberal economic system under the leadership of the United States and Great Britain (Bonnet & Berthet, cited in Öztürk, n.d.). A new system was developed in the United States to be used in international payments with the "International Money Fund" signed in the town of Bretton Woods, in July 1944.

The most crucial purposes of Bretton Woods debates were enhancing the need for a new international monetary system, the stabilization of exchange rates through this system, the liberalization of world trade and the resolution of international reserve problems. Although, both leader countries of the debate, Great Britain and the United States, have offered two different plans and suggestions to the need for a new monetary system, United States' plan has adopted due to the logic of the plan which suggested to construct the new monetary system on the basis of gold (Öztürk, n.d.).

The accepted plan advocated the values of the whole countries' money expressed in gold and argued that the devaluation should have been made only when structural changes occur in the balance of payments. The plan set the US dollar to a conversion of gold which is explained as "ounce" currency, as one ounce was equal to US\$35 or 0.88867 gr. pure gold. Also, it was accepted and pledged to the countries' requirement of holding 25% of the gold monetary stake per every US Dollar issued by the US Central Bank. As a result, the gold convertibility of the US Dollar was completed (Öztürk, n.d.).

According to the International Monetary Fund system, the US Dollar was committed to gold and at the same time, other countries' money currency has assessed the value of the US Dollar. In parallel with the main changes, gold reserve of the United States was increased and national money reserve, the US Dollar reserve, was decreased at the time and gold supply of the United States shortened (Seyidoğlu, cited in Öztürk, n.d.).

As a result, eight most powerful economies of that time had introduced gold pool- under the guidance of the UK, the US, France, Switzerland, West Germany, Belgium, Italy, the Netherlands, and Luxembourg who, between 1961 and 1968, interference to fix the price

of gold at \$35 per ounce which caused a significant change in the Bretton Woods system for stabilising gold prices at a reasonable level (Öztürk, n.d.).

2.7. End of Bretton Woods

In 1967, during the Vietnam War, the US Dollar flow to other countries has been accelerated by the United States. As a result of the increasing speculative movements, the Gold Pool system was terminated in 1968 (Öztürk, n.d.). The Gold Pool system was replaced by the dual gold price system which enacted the gold market transactions into two different situations. Gold prices in the free market began to be determined by supply and demand and the US Central Bank stopped selling gold to the individual request. Gold reserves of the countries had continued to be traded at US\$35 which was the official price of ounce between central banks (Öztürk, n.d.).

More recently, the end of the gold convertibility to the US Dollar had arisen in 1971 due to the continued depreciation in international markets. As a reason, the United States requested to reevaluate other countries’ money instead of devaluating their money. As the idea of revaluating money was refused by other countries, convertibility of the US Dollar to gold was removed as well as stopped central banks’ ounce activities. In this case, central banks could not get gold in exchange for US\$35 anymore. As a result, the exchange rate standard to gold had come to an end and the US Dollar had been reallocated to the open market (Wolf, cited in Öztürk, n.d.).

Table 2.1: Historical Development of Gold

3000BC	The Egyptians are mastered at the art of gold and other metal alloys and processing
1091BC	The Chinese legalized gold as an inward currency
580BC	Gold was used for first <u>fixed-set gold coins</u> publication in the history
58BC	Gold was used to repay the state debt during the Roman period
1886	Gold was found in California, Australia and South Africa

1900	The United States has declared gold standard as a currency
1944	'International Monetary Fund' signed in the town of Bretton Woods
1970	Modern mining started with technological developments

Based on: *Türkiye ve Dünya`da Altın* (Ünal et al., 2016).

Table 2.1 shows the historical development of gold and use as a monetary tool. (Ünal et al., 2016). Although there had been turbulent phases in time gold played a role as being a reservoir for central banks, a raw material for the jewellery industry and traditional ornament. Also, it acts as a safe instrument for investors due to the uncertainties experienced in the recent markets and had become a liquid investment instrument for protection purposes (Baur and McDermott, cited in Pirgaib, 2016).

3. World Gold Demand and Supply Characteristics: Use of Gold in Various Industries

Jewellery, handcraft, and financial trading constitute the chronic uses of gold. Jewellery, nevertheless, makes the largest use of gold with a very respective share among the industries which gold is used. However, use of gold has been varying intensely in several industries due to the advantages of its physical and chemical features as well as a large scale of industrial applications have occurred in today's world (Michelet & Toste, 2014). Main industries and fields which the use of gold is essential and frequent are jewellery, central banks, investment, electronics, nano-technology and dentistry.

3.1. Gold Supply Characteristics

Considering gold supply, three main indicators should be determined; gold extraction from the mine, the sale of the gold stored in the central banks and scrap gold- the gold that has been recycled from the jewellers, goldsmiths and other industries (Pwc, 2012). According to the PricewaterhouseCoopers (2012) report "Direct Economic Impact of Gold," most of the world gold supply growth is attributed from recycled gold and approximately, more than the half of gold supply comes from gold mining. According to the Thomson Reuters GFMS Gold

Survey (2018), the largest source of the overall gold supply are mine production with 3,247 tonnes and scrap gold with 1,210 tonnes respectively.

3.1.1. Gold Mining

Gold mining is described as the method of extracting gold from metal dominant rock from the Earth's crust. It generally takes place in areas wherever there is a major concentration of gold ore- gold dominant rock (World Gold Council, 2016). Globally, gold mining is a worldwide business field with its operations almost on every continent except Antarctica. The overwhelming majority of the global gold was mined within the modern and post-war era. Due to the evolution of the gold industry, mining has become geographically wider and focused. Recently, a lot of countries have become influential gold producers over recent decades. Thus, mine supply has settled down less geographically targeted however this lead gold mining more stable (World Gold Council, 2016).

3.1.2. Official Gold Sales

Besides the gold mining production, another factor that constitutes the most important part of the gold supply is the gold sales from the institutions, especially from the central banks. Central banks sell gold for reasons such as ensuring the stability of money, diversifying their portfolio and combating inflation. In centrally planned economies, official gold sales are not only attributed from annual mine productions they are also determined according to the foreign exchange requirement of these countries (Vural, 2003).

3.1.3. Scrap Gold

Scrap gold, definitively, is the gold sourced from fabricated merchandise form that is already sold or kept ready for purchase, eventually refined into bullion form again. So, typically this means the application of recycling is made to the gold sold for monetary purchase. Partially, recycling does not include the gold traded for different merchandise, in an example, by consumers at jewellery stores as well as does not include scrap method as

progressing gold which never becomes a part of fabricated merchandise (World Gold Council, 2016).

3.1.4. Net Hedging Supply

Gold has been considered as a safe haven – the investment that is expected to retain or increase in value during times of market turbulence. Thus, it is revaluated as a hedge against each equity weakness and tensions within the bond markets, though the connection with the equities is mostly stronger than with the bond markets. Regarding the gold's power within the wake of an economic crisis there typically has to be a tool of financial tension that might have control over the restrained functioning of financial markets. In this sense, gold hedging has an important effect when considering the annual gold supply in the World (World Gold Council, 2007).

3.2. Gold Demand Characteristics

Gold demand is explained in terms of three main segments; gold used for jewellery production, gold used for technology purposes and gold used for investment and finance. Additionally, the factors affecting the demand for gold are explained as economic volatilities and political uncertainties. In such cases, gold is seen as a safe investment tool and as a result demand increases. Increase in demand also affects the gold prices (World Gold Council, 2015).

3.2.1. Jewellery

Gold has been used as the most essential material for jewellery since the beginning of ancient history due to its essential features such as being forgeable, shapeable and resistant. Additionally, being non-reactive and inertial to chemicals have made gold safe for use as an ornament and lead as the primary element for jewellery manufacturing. It is determined that about half of the gold extracted from reserves exists in the form of jewellery (Minerals Council of Australia, 2016). According to the World Gold Council (2016), 57% of the world annual gold demand in 2015 was covered for jewellery with 2.415 tonnes.

3.2.2. Central Banks

Throughout history, due to its ability to preserve its value, gold has formed the basis of the trade and international payment systems for many years as well as playing an important role as a means of investment and storage. While the monetary significance of gold has shrunk with the development of modern economies and the banking system, it is still used as one of the most primary important elements of central banks and national reserve holdings (Türkiye Sermaye Piyasası Aracı Kuruluşları Birliği, 2010).

3.2.3. Investment

In parallel to the emerging financial markets, the diversity of investment products in gold has also increased. In addition to the investments made in gold, such as gold coins, bullions and jewellery, financial investment tools based on gold also exists. According to the Turkey Association of Capital Market Intermediary Institutions (2010), it is possible to sort the investment tools related to gold as follows (Türkiye Sermaye Piyasası Aracı Kuruluşları Birliği, 2010).

- Total gold bars and coins.
- Gold products based on trading in the stock market.
- Bank accounts created based on investment.
- Exchange traded funds and gold certificates.
- Funds based on gold.

3.2.4. Electronics

One of the most important fields of gold used is the electronics industry. Gold is significantly used in the electronic implementation of telecommunication, automotive use and defence through appropriate features of gold such as forgeability and ductileness (van der Lingen 2005, p.75). Additionally, being insensitive to chemical oxidation and electrical conduciveness has lead usability of gold in the manufacturing of various electronic devices.

Some examples of main tools which derived benefit from gold are conductive connectors and coverages of electrical wires as well as the gold-plated chips used in mobile phones and laptops. These features and areas are the figurative examples of current use of gold in electronic circuitry (Michelet & Toste, 2014).

3.2.5. Nano-technology

Use of gold in the boundaries of nanotechnology and catalysis has introduced an extraordinary example of gold application and spotlighted academical and industrial interests of researchers so far. In terms of alternative medicine, there have been prevailing endeavours that gold nanoparticles can be used for the medical treatment of diseases and various cancers (Michelet & Toste, 2014). Significant attention has arisen during the last few decades on improving new practices for the creation of gold nanoparticles in accordance with biological science (van der Lingen 2005, p.78).

Some examples of gold nanoparticles used in the medical therapies are given as numerous applications in the biological and pharmaceutical field of activity. Gold nanoparticles have overpowering and light-scattering features, as well as easy biocompatibility. Thus, according to the medical researchers, they are ideally used in bio-labelling and various medical therapies. More specifically, gold nanoparticles are developed and upgraded to gold nanolayers by medical scientists which have been considered substantial for the purposes of cancer treatment by hyperthermia and thermoablation. These two types of therapies use heat to treat and remove cancer cells which lead the use for chemotherapy treatments (van der Lingen 2005, p.78).

3.2.6. Medicine and Dentistry

Proven biocompatibility of gold is extensively taking advantage of alternative dentistry for enamel operations and teeth restoration (Michelet & Toste, 2014). Gold is one of the oldest material used in the application for teeth restoration, having been applied for dental treatment since the ancient times of history. Use of gold in early dental applications were clearly due to the aesthetical specialities of gold and gold alloys which is to be continued and

benefited in modern dentistry. Although there are increasing alternative materials for dental treatment so far, current gold technology is still analyzed and examined in accordance with these alternative materials in the light of current gold usage, however, the use of gold in dentistry is significantly taking place (Rudolf et al., 2012).

In dentistry and orthodontics, pure gold is applied as well as gold alloys combined with other metals. Being substantially stable to chemicals, gold and gold alloys are compatible with the mouth in dental treatment, is the main reason for gold preference in dentistry and orthodontics. Additionally, being mechanically strong, ductile and elastic lead the long-lasting use of gold in dental treatment so far (Rudolf et al., 2012).

3.2.7. Engineering

Other than uses of gold in electronics, various engineering fields and space technology are established examples of various industries which benefits from prospecting features of gold in an example, lubricating cloth, in gas cells or jet engines. One of the most efficient prospects of gold used in engineering is due to its efficiency as being a reflector of infrared light (Michelet & Toste, 2014).

Gold as a metal has a distinctive function of coating and reflection which make its use compatible with the advanced technology of space telescopes as well. Last introductions of NASA to the space industry show us that microscopically-thin gold coating is used in advanced technology of space telescopes which allows the use of the metal characteristics of gold as an efficient reflector of infrared light. Similarly, these reflective features of gold have been taking attention of engineers as they apply a thin coating of gold plating in windows to prevent radiation heat as well as to lower energy costs and carbon emissions (World Gold Council n.d.).

4. World Gold and Jewellery Production, Supply and Demand Figures

Jewellery, in simplest terms, is the art of producing all kinds of apparel or ornaments by processing precious metal and stones and transforming these products into works that are

used as investment tools after processing. Gold is the first thing that comes to mind when jewellery is called. However, in the jewellery industry, other precious metals such as silver, minerals other than gold or their combinations are also used (Türkiye Cumhuriyeti Ekonomi Bakanlığı, cited in Doğu Akdeniz Kalkınma Ajansı, 2015).

Gold is the most used material as a raw material in the jewellery industry. Until the 20th Century, the most gold productive country that produces the highest amount of gold was the Republic of South Africa (Doğu Akdeniz Kalkınma Ajansı, 2015). During the years between 1987 and 2016, the volume of gold mined annually grew by 88% and the value of that gold increased by 427%, to US\$131 bn (World Gold Council, 2017).

Considering the last 30 years of the gold market, there has been a reasonable change from restrictive and limited market opportunities to substantial growth in numbers. In many parts of the world, gold was affected by restraining policies and legislation. For example, disallowance to keep gold as an investment tool, as well as an enclosure to imports and pricing, were the main blockades for the development of gold. Thus, gold stayed below value and suffered from a lack of understanding for its opportunities in the marketplace (World Gold Council, 2017).

However, in today's world, the gold market has shown substantial growth and expansion with the allowance of use as an investment tool. Recent developments have been leading the gold market with advancements in product innovation, improved distribution and successful trade renovation as well as accretive changes in policies and regulations. Additionally, a moderate outgrowth of knowledge and access to the sources lead the use of gold within a great expansion in the financial system due to increased insight and understanding among contributors in the market (World Gold Council, 2017).

During the last 30 years the size and form of the gold market have shown considerable changes within the numbers and the market value, as well as the role of the gold in economies, has shown an incredible rise.

For example, in the last decade of 1970, the gold market was restrained in size and scope with global mine manufacturing totalled around 1,500 tonnes as well as with

responsibility of South Africa more than half of the gold manufacturing worldwide (World Gold Council, 2017).

In 1970, the Republic of South Africa produced 1,000 tonnes of gold per year, but in time, the production in the country was reduced and proceeded by China, Russia, Australia and the United States (Doğu Akdeniz Kalkınma Ajansı, 2015). Table 4.1 shows the last 47 years of world gold production in major countries and significant change in the South African gold production (İzmir Ekonomi Üniversitesi, cited in Doğu Akdeniz Kalkınma Ajansı, 2015; Thomson Reuters, 2018).

Table 4.1: World Gold Production and Change Between 1970 – 2017, (in tonnes)

Country	1970	1980	1990	2000	2010	2017
China	1.6	7	100	175	345	426.1
Australia	19	17	244	295	261	295
Russia	202	258	302	142	192	270.7
USA	54	30	294	353	231	230
Canada	74	50	169	153	91	175.8
South Africa	1000	674	605	428	189	139.9
Worldwide	1,478	1,218	2,127	2,573	2,598	3,246.5

Based on: *Kuyumculuk Sektör Raporu* (İzmir Ekonomi Üniversitesi, cited in Doğu Akdeniz Kalkınma Ajansı, 2015); *GFMS Gold Survey* (Thomson Reuters, 2018).

Table 4.2 shows the top ten countries of world gold production in 2016 - 2017 (Thomson Reuters, 2018). World gold production was increased in the last 27 years since 1990. It is the year 2017 when the world's total gold production reached its highest level. As of 1990, gold production exceeded 2,000 tonnes. In 2000, while the total revenue generated by the global jewellery industry was approximately US\$113 bn, a significant change occurred in 2012 which an increase was recorded as US\$210bn (Doğu Akdeniz Kalkınma Ajansı, 2015).

In 2017, world gold production has reached a total of 3,247 tonnes with a slightly below figure compared to previous year due to the environmental issues in China and a quelling on illegal mining in Indonesia (Thomson Reuters, 2018).

Table 4.2: World Gold Production in 2016 - 2017 by Top Ten Countries (in tonnes)

Country	2016	2017
China	453.5	426.1
Australia	290.2	295.0
Russia	253.6	270.7
USA	222.0	230.0
Canada	165.0	175.8
Peru	168.5	162.3
Indonesia	174.9	154.3
South Africa	145.7	139.9
Mexico	133.1	130.5
Ghana	94.1	101.7
Rest of the World	1150.8	1160.2
Worldwide	3,251.4	3,246.5

Based on: *GFMS Gold Survey 2018* (Thomson Reuters, 2018).

4.1. Gold Supply in Today's World Economy

As an important detail, a cause of a fall in the gold supply is inconvenient circumstances to find new resources in the gold mining industry and increasing costs of gold extraction due to the ongoing increase in gold mining costs. These have a direct proportion of the increase in gold prices as well as cause an increase for the gold in the hands of central banks (Doğu Akdeniz Kalkınma Ajansı, 2015).

Table 4.3: World Gold Supply in 2016 – 2017, (in tonnes)

	2016	2017	Total Share (2017)
Total Mine Production	3,263.0	3,268.7	% 74,3
Net Producer Hedging	32.8	-30.4	-% 6,91
Total Mine Supply	3,295.8	3,238.3	% 73,62
Scrap Gold	1,295.1	1,160.0	% 26,37
Total Supply	4,590.9	4,398.3	% 100

Based on: *Gold Demand Trends Full Year 2017* (World Gold Council, 2018).

Table 4.3 shows the total world gold supply in 2016 - 2017 (World Gold Council, 2018). When we have a look at the total gold supply in the world, approximately 74% of total gold supply enclosed by mine supply and 26% of the total supply subsumed by the scrap gold supply (World Gold Council, 2018).

4.2. Gold Demand in Today's World Economy

Gold demand and related statistics are easier to explain by institutions due to the large-scale uses and well-statistical documentation of gold (Pwc, 2012). Additionally, its use as an investment lead the statistics clearer and due to its highest amount is used in jewellery, gold demand is consistently explicable. In 2017, the share of gold used in jewellery manufacturing was about 53%, the share of gold used for technology purposes was about 8% and the share of gold used for investment and finance was about 30% of the total demand. The source of gold used for investment and finance purposes includes funds and central bank purchases (World Gold Council, 2018). Table 4.4 shows the total world gold demand in 2016 - 2017 (World Gold Council, 2018).

Table 4.4: World Gold Demand in 2016 – 2017, (in tonnes)

	2016	2017	Total Share (2017)
Jewellery	2,053.6	2,135.5	52.4%
Technology	323.4	332.8	8.17%
Electronics	255.6	265.3	6.51%
Other Industrial	49.8	50.6	1.24%
Dentistry	18.0	16.8	0.41%
Sub Total Production	2,377.0	2,468.3	68.73%
Investment	1,595.5	1,231.9	30.25%
Total Bullion Gold	1,048.7	1,029.2	25.27%
Gold/ETF	546.8	202.8	4.98%
Central Banks Purchase	389.8	371.4	9.12%
Gold Demand	4,362.3	4,071.6	100%

Based on: *Gold Demand Trends Full Year 2017* (World Gold Council, 2018)

The total amount of gold demand in the jewellery industry is following a steep course over the years. In 2009, there was a significant decrease in the amount of gold along with the occur global crisis the previous year. While there was an increase accelerated in 2010, once again, an obvious decrease was written in the next two years. Within this declining trend, the lowest level of numbers ever has recorded after 2009.

However, in 2014, a 41 per cent increase was obtained compared to previous year, which was very successful as the highest volume of increase among the last ten years, thanks to the fact that the trade balance in China was successfully above the expectations of that year (Doğu Akdeniz Kalkınma Ajansı, 2015). Meanwhile, the total value of gold has experienced a continuous increase in terms of the jewellery industry (World Gold Council, 2016).

More recently, declined figures in 2016 resulted in a corresponding increase in 2017 again in full-year demand driven by a recovery in India, the United States and China. (World Gold Council, 2018). Table 4.5, shows the total world gold demand of jewellery industry between years 2008 and 2017 (World Gold Council, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018 in press).

Table 4.5: Total World Gold Demand of the Jewellery Industry in 2008 - 2017, (in tonnes)

Year	Tonnes	Total Value (US\$ bn)
2008	2.306	64,6
2009	1.816	56,7
2010	2.052	79,4
2011	2.093	99,6
2012	2,135	101,7
2013	2,673	121,3
2014	2,480	100,3
2015	2,415	102,4
2016	2,053	89,6
2017	2,135	99,7

Based on: *Gold Demand Trends Full Year 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018* (World Gold Council, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018 in press).

4.3. Imports and Exports of Jewellery in the World

According to the statistics for 2017, world gold jewellery trade imports were determined as US\$76 bn as the total world precious jewellery trade worth at US\$170 bn (Türkiye Cumhuriyeti Ekonomi Bakanlığı, 2017). Hong Kong is the most influential jewellery importer in the world jewellery industry. Respectively, world jewellery imports are successfully proceeded by the United States, United Arab Emirates, Switzerland and France after Hong Kong.

Table 4.6: World Jewellery Imports by Top Ten Countries in 2013 – 2017, (in US\$ bn)

Country	2013	2014	2015	2016	2017
Hong Kong	12.2	14.1	10.8	11.3	12.1
UAE	9.2	9.8	7.2	7.2	11.7
Switzerland	8.8	9.4	9.9	8.8	11.1
USA	7.7	7.7	8.0	8.3	9.1
France	3.6	4.0	3.9	4.1	4.3
UK	3.9	4.1	4.0	3.6	3.0
Singapore	3.8	3.7	3.2	3.2	2.6
Italy	1.2	1.3	1.5	1.5	1.9
Japan	1.6	1.7	1.6	1.8	1.9
Germany	1.4	1.5	1.5	1.4	1.6
World Total	68.7	72.9	71.0	68.0	76.1

Based on: *List of importers for the selected product Product: 7113 Articles of jewellery and parts thereof, of precious metal or of metal clad with precious metal* (“Trade Map - ITC,” n.d.)

Table 4.6 shows the world jewellery imports by the top ten countries in 2013 – 2017 (“Trade Map - ITC,” n.d.). World jewellery imports have recorded a downtrend in 2016 and declined by approximately 7% compared to the previous two years. Within the period of 2017, there has been an increasing trend again with an increased rate which is 12%.

According to the obtained statistics in 2017, world gold jewellery trade exports worth at US\$96 bn as total world precious jewellery trade worth at US\$170 bn (Türkiye

Cumhuriyeti Ekonomi Bakanlığı, 2017). The United States and China were the two largest jewellery exporters among gold producer countries, with export earnings of US\$33.7 bn and US\$22.9 bn respectively in 2012 (Pwc, 2012).

However, in 2014, it is seen that only Switzerland and the United States remain among the top five countries of the largest jewellery exporter countries in the world are in the top five countries of the largest jewellery importer countries as well (“Trade Map - ITC,” n.d.). For some countries, gold mining is a significant source of exports and, therefore, foreign exchange earnings (Pwc, 2012).

Table 4.7: World Jewellery Exports by Top Ten Countries in 2013 – 2017, (in US\$ bn)

Country	2013	2014	2015	2016	2017
India	10.6	13.0	9.9	12.5	12.7
Switzerland	9.0	10.7	11.0	11.0	11.1
China	28.8	48.5	18.5	13.0	11.0
USA	9.6	10.3	9.6	9.8	10.2
Italy	6.9	6.9	6.2	6.0	7.0
Hong Kong	7.0	7.6	6.7	6.0	6.2
France	3.8	4.5	4.5	4.7	5.0
UK	4.3	5.1	6.2	4.5	4.7
UAE	9.2	11.8	10.9	11.8	4.3
Turkey	3.4	4.3	3.7	3.7	4.1
World Total	112.6	143.9	107.9	104.6	95.7

Taken from *List of exporters for the selected product Product: 7113 Articles of jewellery and parts thereof, of precious metal or of metal clad with precious metal* (“Trade Map - ITC,” n.d.).

Table 4.7 shows the world jewellery exports by the top ten countries in 2013 – 2017 (“Trade Map - ITC,” n.d.). India is the most influential gold exporter in the world jewellery industry. Respectively, world jewellery exports are successfully proceeded by Switzerland, China, the United States. Statistically, world jewellery exports have recorded a downtrend last three years. China is the only country which failed to keep largely its growth of export revenues between 2014 and 2017.

4.4. Gold Reserve of Countries

One of the factors affecting the supply of gold is the reserves of central banks. Central banks make reserve deposits in the form of currencies, bullion or coins in order to provide currency stability and as a protection against inflation or economic crises. Increase in the gold reserves in the hands of the Central Banks has caused a rise in gold prices. Increase in gold prices also increases the value of reserves in the hands of countries that hold significant amounts of gold reserves as in the United States. Table 4.8 shows the world countries with the highest gold reserves in 2014 - 2015 (World Gold Council, 2016).

Table 4.8: Countries With The Highest Gold Reserve in 2014 – 2015, (in tonnes)

Ranking	Country	2014	2015
1)	The United States of America	8.133,5	8.133,5
2)	Germany	3.384,2	3.381,0
3)	IMF	2.814,0	2.814,0
4)	Italy	2.451,8	2.451,8
5)	France	2.435,4	2.435,6
6)	China	1.054,1	1.762,3
7)	Russia	1.208,2	1.392,9
8)	Switzerland	1.040,0	1.040,0
9)	Japan	765,2	765,2
10)	Netherlands	612,5	612,5
12)	Turkey	529,1	557,7
36)	Poland	102,9	102,9

Based on: *Gold Demand Trends Full Year 2015* (World Gold Council, 2016).

The most significant increase in national gold holdings of countries was progressed in China in 2015. According to the report of the World Gold Council (2016), an influential flow of gold into China has even far exceeded a significant increase of its national gold holdings as well as exceeded the amount needed to meet domestic jewellery demand. Chinese investors

are confronted with an increasing variety of trade channels of gold products and leading gold investments which allowed the anticipated demand in return to growth.

4.5. Largest Gold Mines in the World

Total world gold production is considered about 3.4 billion ounces, of that over more than half was extracted within the past 50 years. Regarding the all-time productivity of the world's largest gold mines, 45% of the total world gold production has been extracted from the Witwatersrand district in South Africa. Additionally, one of the largest gold mines in the world has been accounted in the United States, in South Dakota which has been leading almost 10% of total gold production in the United States since its start of operation within its reserves of about 40 million ounces (United States Geological Survey, n.d.).

In the 1970s, developed and developing countries had been focusing on great importance to gold mining. After the 1980s, there were large increases recorded for gold production in countries such as the United States, Canada, Australia, Russia, China, Indonesia, Brazil and the Philippines (Maden Mühendisleri Odası, 1997). Table 4.9 shows the top ten world largest gold mines and deposits in countries based on a contained ounce and tonnes of gold (National Resource Holdings, 2013).

Table 4.9: Top Ten World Largest Gold Mines and Deposits

Deposit Name	Contained Ounce	Tonnes (mt)	Country
Pebble Deposit	107,269,278	10,776	The United States
Nataalka	91,179,118	1,693	Russia
Grasberg	85,800,000	4,765	Indonesia
South Deep	81,330,718	415	South Africa
Olimpiada	77,435,009	748	Russia
Lihir	55,347,469	1,020	Papua New Guinea
Mponeng	50,832,453	111	South Africa
Muruntau	50,000,000	625	Uzbekistan
KSM Deposit	48,592,023	2,895	Canada
Cadia Valley	48,116,771	3,630	Australia

Based on: *Global 2013 Gold Mine & Deposit Rankings* (National Resource Holdings, 2013).

It is important to highlight that the costs and operational economics of gold deposits are mostly variable on two main factors which are size and grade. Unless the ore body of mine is sizeable, a mining operation can face difficulties to acquire the economies of scale to measure up the cost of production. Likewise, unless the operation project is having a lack of grade, this may cause the lack of margins for each ton of ore processed to support production (National Resource Holdings, 2013).

While North America seems as the continent having the largest amount of contained gold, Africa continues to be the land of mines with the highest grade on the planet. The highest grade gold deposits in the world can be listed within countries such as South Africa, Tanzania, Mali, Russia, Ghana, Ivory Coast, Ecuador, Kyrgyzstan, and Papua New Guinea (National Resource Holdings, 2013).



Chapter 2: Gold Market and Jewellery Industry in Turkey

In this chapter, firstly, the jewellery industry in Turkey will be identified and featured in consideration of the interpretative articles, figures of worldwide institutions and chambers of jewellery and other authority bodies from Turkey. Secondly, the role of the industry in the economy will be figured according to the illustrative aspects such as size and product variability. Then, the trade-based features of the industry will be determined such as demand, supply, import and export figures by evaluating the published and released reports and statistical data.

1. Turkish Jewellery Industry

Historically, roots of the Turkish jewellery tradition is based on the influence of all civilizations that lived in Anatolia since 5000 years such as Hittites, Urartu, Phoenicians, Ionians, Lydians, Romans, Byzantines, Seljuk and Ottomans, including their specific religious and aesthetic understanding of various jewellery styles. Among these civilizations, the most influential development had been brought by Seljuks and Ottomans which lead important welfare in the region as well as an important aspect to the art of jewellery (Türkiye Cumhuriyeti Ekonomi Bakanlığı, 2017).

During the most developed period of the Ottoman Empire, the art of jewellery gained its importance in Istanbul, which maintained the Ottoman capital city among the most important jewellery centres in the world. In this period, historical sources show us that the world jewellery exhibitions of that era were held in Istanbul (Türkiye Cumhuriyeti Ekonomi Bakanlığı, 2017).

Turkish jewellery industry gained rapid developments after the 1990s, thanks to the acceleration of the industry with the application of technological innovation in order to increase the capacity of the production. On the other hand, attempts of establishing educational institutions have been leading the industry to be able to have a place in domestic and overseas markets regarding the importance of the jewellery design. After the introduction of the Istanbul Gold Exchange in 1995, the raw material requirement of the jewellery industry

met at international prices and the financial instruments based on gold have been brought to the Turkish financial industry (Kaplan, cited in Yaşar, 2016).

1.1. Market Size

In terms of market size, Turkey is among the top five markets in the world, together with India, China, the United States and Russia. On the other hand, the country is among the top three countries with India and Italy in terms of jewellery production. Respectively, the country has an annual 400 tonnes of gold processing capacity, but still the current progress is considered as under capacity. Every year, approximately between 250 and 300 tonnes of gold jewellery is produced in Turkey. Additionally, the jewellery industry is one of the largest among Turkish manufacturing industries which approximately 250 thousand people are participating in various fields of the jewellery industry (Türkiye Cumhuriyeti Ekonomi Bakanlığı, 2017).

In 2012 alone, the industry added more than US\$3.8 bn to Turkey's economy within gold fabrication, consumption and recycling. Taking the Turkish jewellery value chain in hand, the number of production bases and stores are interestingly high. Recently, there are 5.000 gold fabricators, 35.000 thousand retail stores contributing to the industry with 250 thousand people are employed (World Gold Council, 2015). The main gold jewellery production centres are located in Istanbul. Moreover, Ankara and Izmir are also significantly contributing to the industry with their numerous production centres and jewellery stores (Türkiye Cumhuriyeti Ekonomi Bakanlığı, 2017).

The great production capacity of the industry is enriched with the excellent crafting of international design teams through advanced technology. The industry has the power to create high-quality designs and models. Moreover, the industry has a flexible production mentality that can meet the demands of customers thanks to its potential. Turkish jewellery manufacturers have guided a quality approach through world standards at all stages of production (İstanbul Ticaret Odası, cited in Yaşar, 2016).

Commercially, Yaşar (2016) has spotlighted about the most important features of Turkish jewellery industry regarding the advantageous position of the industry in foreign markets:

- Ancient jewellery tradition acquired with the accumulation of centuries.
- The diversity of products available within alternative designs.
- Increased self-confidence in foreign markets.
- Flexible production opportunities offered to the customer.
- High-quality understanding of jewellery.
- Competitive price advantage and fast delivery advancements.

1.2. Role of the Jewellery Industry in the Turkish Economy

In the Turkish economy, gold is a matter of priority in terms of wealth accumulation, investment and as being an important saving tool (Akel and Gazel, 2015). Turkey's interaction with gold is sustained by an intimate cultural and traditional heritage. Gold plays a significant role in weddings and other parts of religious life (World Gold Council, 2015). According to the Gold Miners Association in Turkey, approximately 700.000 weddings, 300.000 thousand circumcision and 500.000 engagement ceremonies are held annually (Akel and Gazel, 2015).

Also, gold is used as an instrument of exchange and a mean of account related to jewellery fabrication industry (World Gold Council, 2015). With a yearly average consumption of 181 tonnes of gold, Turkey is inscribed as the fourth country to consume the highest amount of gold in the world during between 2004 and 2014 period (Akel and Gazel, 2015).

In addition, by participating in 'golden days', which are part of the social and cultural structure, the Turkish people are evaluating their accumulation by saving gold thus they have been considering gold as a protection against inflation and the value losses of Turkish Lira against foreign currencies (Akel and Gazel, 2015).

As a result of Turkish tradition related to gold savings, it was inscribed that while the average annual inflation rate in Turkey was 60% between 1997 and 2003 period, Turkish Lira suffered a loss of four times against the US Dollar between 2000 and 2014 period. In the same period, the value of gold regarding the local currency became 16 times more valuable (Akel and Gazel, 2015).

Due to these facts, 'under-the-pillow' concept can be definitively argued and discussed in terms of contribution to the economy. According to the assumptions and calculations made by the Central Bank of the Republic of Turkey (TCMB), households are saving 2,189 tonnes of under-the-pillow gold (Akel and Gazel, 2015), while the estimated figure in the World Gold Council (2015) report is around 3,500 tonnes. At the end of 2013, this gold stock corresponds to approximately US\$145.3 bn and 12% of GDP in Turkey (Akel and Gazel, 2015).

Additionally, considering the World Gold Council (2015) data by the end of 2013, commercial banks held around 250 tonnes of gold which was equivalent to US\$10.4 bn. This large part of the figure resulted from the investors prefer to switch Turkish Lira and other foreign currencies into gold.

1.3. Main Institutions Present on the Turkish Gold Market

Regarding the gold market and the jewellery industry in Turkey, there are main institutions that are responsible for monetization and emission of gold products and coins as well as monitoring and participating in the production. Additionally, a large number of international associations, councils, and local chambers can be considered as the main administrative authorities in accordance with the jewellery industry.

The most important and influential ones are namely, General Directorate of Mint and Stamp Print House (Darphane), Istanbul Gold Exchange (İstanbul Altın Borsası), Istanbul Chamber of Jewellery (İstanbul Kuyumcular Odası), Istanbul Minerals and Metals Exporters Association (İstanbul Maden ve Metal İhracatçı Birlikleri), Istanbul Gold Refinery (İstanbul Altın Rafinerisi), Jewellery Exporters' Association (Mücevher İhracatçıları Birliği) and Kuyumcukent

1.3.1. General Directorate of Mint and Stamp Print House (Darphane)

The General Directorate of Mint and Stamp Print House was established for issuing the official republic gold coins, formal seals, medallions and printing and distributing the valuable papers officially according to the provisions of the Decree-law. The institution is one of the oldest institutions which its early roots are predicated on the monetary and financial requirements in the Ottoman Empire ("Darphane Genel Müdürlüğü," n.d.).

1.3.2. Istanbul Gold Exchange (İstanbul Altın Borsası)

Istanbul Gold Exchange was founded in 1995 in order to liberalise the Turkish gold industry and adapt it to international markets. As of 2015, there are 662 members participating in the exchange including the stock market members, banks, precious mining agencies, precious metals production and marketing organizations (Türkiye Cumhuriyeti Ekonomi Bakanlığı, 2017).

The main aims of founding Istanbul Gold Exchange are evaluating an organized market environment for the organizations performing for gold supply and demand, assuring the production financing of jewellery industry at lower costs and securing gold to be traded in the financial markets. The institution has an important role in undertaking a bridge between the gold industry and the financial industry in Turkey (Türkiye Cumhuriyeti Ekonomi Bakanlığı, 2017).

1.3.3. Istanbul Mineral and Metals Exporters' Association (İstanbul Maden ve Metal İhracatçı Birlikleri)

Istanbul Mineral and Metals Exporters' Association is established to deal with all aspects of export activities all kinds of gold, jewellery, minerals, natural stones and chemical products within regions that have a high level of export activities together with Turkey. Main benefits from the establishment of the association are increasing exports, verifying products and preserving professional cooperation. ("İstanbul Maden ve Metal İhracatçı Birlikleri," n.d.).

1.3.4. Istanbul Gold Refinery (İstanbul Altın Rafinerisi)

Although the Istanbul Gold Refinery was founded in 1995, the official establishment date is 2002. In the refinery, scrap gold is transformed into gold bullion form again to reuse and proceed in export activities. Istanbul Gold Refinery has the necessary technology for refining 99.99% purity gold in short time which represents the advancements of Turkish jewellery technology (Türkiye Cumhuriyeti Ekonomi Bakanlığı, 2017).

1.3.5. Jewellery Exporters' Association (Mücevher İhracatçıları Birliği)

Jewellery Exporters' Association is founded as a semi-governmental and non-profit association, in 2003 with the resolution of the Turkish government and is affiliated with the Ministry of Economy. The Association has over thousand member corporations recently and has been a primary organization that lead the jewellery exports, encourage exporters to achieve alternative markets abroad and to secure a larger share in these alternative markets ("Mücevher İhracatçıları Birliği," n.d.).

Recently, the Association arranges trade fairs and exhibitions to introduce Turkish jewellery products to alternative markets worldwide, evaluates trade targets from Turkey to potential alternative markets, and gains coordination from multiple countries in accordance to trade and exchange between these countries and Turkey ("Mücevher İhracatçıları Birliği," n.d.).

1.3.6. Kuyumcukent

Kuyumcukent, meaning 'Jeweller City', is a plant created by participant individuals and establishments of Turkish jewellery industry with the aim of meeting Turkish jewellery in accordance with modern and technological requirements of today's jewellery as well as raising the industry to a strategic position in the international scale. It was built on a gross construction area of 328 thousand meters square land with more than 2500 production base, sale units and store outlets. Recently, the plant has been representing one of the most

combined and productive industrial base in Turkey (Türkiye Cumhuriyeti Ekonomi Bakanlığı, 2017).

1.4. Product Variability of Traditional Turkish Investment Gold

Jewellery products in the Turkish domestic market are produced and valued from 22k, 18k and 14k gold alloys. In terms of investment, there are market-specific investment tools based on gold in the Turkish domestic market which are produced and valued as 22 karat gold within various specific grams. The most popular Turkish investment tools based on gold namely Quarter Gold Coin (Çeyrek Altın), Half Gold Coin (Yarım Altın), Full Gold Coin (Tam Altın), Cumhuriyet Gold Coin (Cumhuriyet Altını), Two and a Half Pieces of Gold, (İki Buçuklu Altın) and Five Pieces of Gold (Beşi Bir Yerde) can be considered as the most preferable and highly demanded in the domestic jewellery market (“Altın Rehberi,” n.d.).

- *Quarter Gold Coin (Çeyrek Altın)* has the lowest value which is produced and standardised at 1.75 gr. The production date on the front side of the quarter gold coin indicates the production year. (“Altın Rehberi,” n.d.).
- *Half Gold Coin (Yarım Altın)* is standardised at 3.50 gr. The reason for calling its name as half is the size which equals to the half of Full Gold Coin. It is less preferable in the market due to being more expensive than the cost of a Quarter (“Altın Rehberi,” n.d.).
- *Full Gold Coin (Tam Altın)* is equivalent to four times larger size of the Quarter. Likewise, it is produced and standardised at 7.00 gr. Full Gold Coin is also known by another name among the society such as ‘Ziyet Altın’. Similarly, it is less preferable in the market due to its higher costs (“Altın Rehberi,” n.d.).
- *Cumhuriyet Gold Coin (Cumhuriyet Altını)* is the most popular investment gold in Turkey as well as the most traded among jewellers. As a fact, it is manufactured for direct investment thanks to its production size which allows itself easily kept by investors. Likewise other investment golds, it is produced and valued as 22 karat gold

but standardised at 7.21 gr. Cumhuriyet Gold Coin is also known by another name among the society such as ‘Ata Altını’ (“Altın Rehberi,” n.d.).

- *Five Pieces of Gold (Beşi Bir Yerde)* is evaluated as five units of Cumhuriyet Gold Coin or Full Gold Coin in one specified piece as well as produced different looking like in accordance to them. It is equivalent to the 20 units of Quarter Gold Coin as well. Due to having two different styles, its production is standardized either at 35 gr or 36 gr. The most specific feature of that gold is being rare in the market. The reason is that higher cost as well as lower circulation in the market (“Diğer Altın Çeşitleri,” n.d.).

2. Jewellery Supply and Demand in Turkey

As widely discussed above, the global gold supply has been recorded around 4,398 tonnes in 2017 (World Gold Council, 2018). In comparison to 3,017 tonnes, the global gold supply in 2007 (Pwc, 2012) current result is having increased by 46%. Additionally, global gold demand has been recorded at around 4.071 tonnes in 2017 (World Gold Council, 2018). Recently, it is measured that high amount of bar, coin and jewellery consumption and production developed the Turkish economy by a minimum of US\$2.8 bn. Additionally, it is clearly defined that the economic impact of gold recycling has a large positive effect on the efficient amount (World Gold Council, 2015).

According to the PricewaterhouseCoopers estimations, the gross value added of world gold recycling is considered around between US\$23.4 bn and US\$27.6 bn. Presuming the share of Turkey in this sense, it is equivalent to its share of global gold recycling by tonnage, recycling could develop Turkey’s economy by an additional US\$1 bn (World Gold Council, 2015).

2.1. Characteristics of Jewellery Supply in Turkey

In Turkey, factors related to the supply of gold can be explained in terms of specific circumstances. Although there are gold mines existing in Turkey, due to the insufficient

quantities of extraction, a large part of the need for gold is covered by the gold imports and scrap gold supply which approximately recorded as 62 tonnes of scrap gold in the country last year (Thomson Reuters, 2018).

2.2. Characteristics of Jewellery Demand in Turkey

In Turkey, factors affecting the demand for gold can be defined into three sections; social, political and economic terms. A significant part of the gold is being bought and sold due to social factors such as weddings, holidays and circumcisions. Politically, during the period of political turbulence, such as war, a military coup and the state of emergency, society fled their paper money and invest in gold as these have always resulted as an increase for the gold demand in the country. Also, economically, governmental decisions have been always important factors affecting the demand for gold (Vural, 2003).

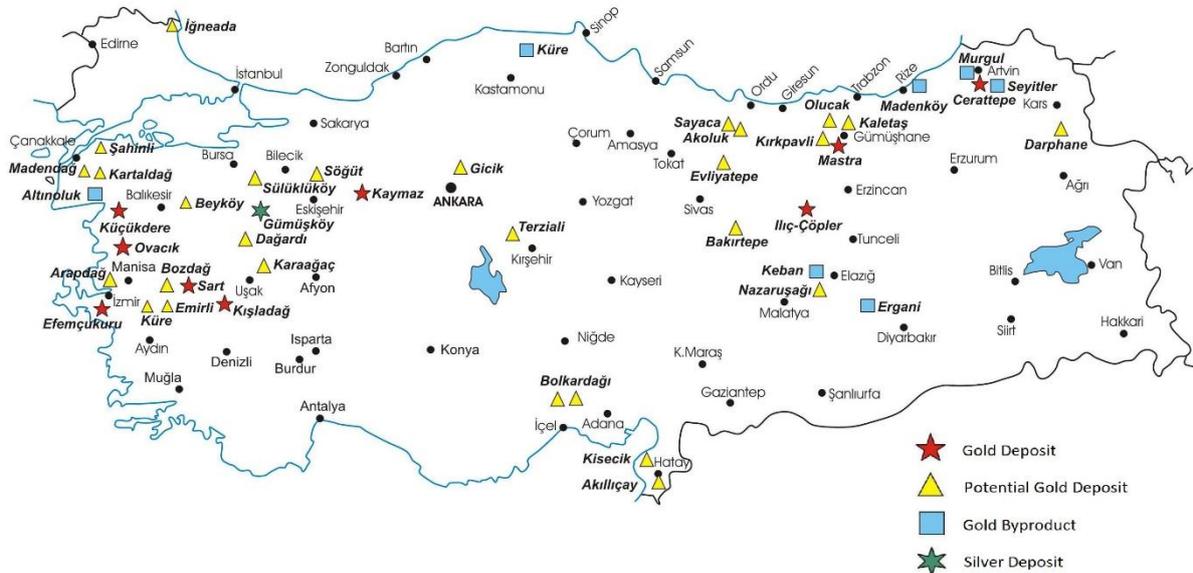
2.3. Gold Mining in Turkey

Preliminary gold production begins in the first gold mine, Ovacik, Bergama, which lead the gold mining in Turkey as well as run the gold production extensively in 2001. Respectively, gold mining in Turkey absorbed by the gold mines namely Salihli, Manisa in 2002, Uşak, Kışladağ in 2006, Gümüşhane, Mastra in 2009, Erzincan, Çöpler in 2010, Eskişehir, Kaymaz in 2011, İzmir, Efemçukuru in 2011 and Niğde, Tepeköy in 2012 (Doğu Akdeniz Kalkınma Ajansı, 2015, p. 24).

Although gold production wasn't in circulation until 2000, it was rapidly increasing after that year and it was recorded about 17 tonnes of production amount in 2010. Respectively, in 2014, the figure was increased to 32.3 tonnes of gold (Doğu Akdeniz Kalkınma Ajansı, 2015, p. 25).

When these figures are evaluated between 2004 and 2014, it is seen that every year, gold extraction and production dramatically increased (Doğu Akdeniz Kalkınma Ajansı, 2015, p. 25). Map 2.1 shows the gold and silver mine deposits in Turkey in 2017 ("Türkiye Maden," n.d.).

Map 2.1: Gold and Silver Mine Deposits in Turkey (2017)



Based on: *Türkiye Maden Yatakları Haritaları* ("Türkiye Maden," n.d.).

2.4. Jewellery Production in Turkey

Jewellery industry in Turkey has the annual capacity of 600 tonnes of gold processing but only 75% of its capacity is remarkably used. Historically, while the industrial affection was based on the concept "from father to son" and the concentration rate was very low, after the year of 1980, an impressive incorporation process was progressed within the industry through the transition to an understanding of growth strategy based on exports and the increases in domestic tourism incomes (Yetkiner and Özkan, cited in Yaşar, 2016, p. 7).

Turkey has the capacity of transforming 600 tonnes of gold to jewellery by processing annually. Approximately, between 250 and 300 tonnes of gold jewellery is produced every year (Türkiye Cumhuriyeti Ekonomi Bakanlığı, 2017).

Turkey is among the top three countries regarding global jewellery production with India and Italy. Approximately 5,000 jewellery atelier and workshop are operating in the industry. In addition to these numerous workshops, there are around 500 large, small and medium-sized business operations around the industrial bases. Additionally, there are more

than 50 companies with around 200 to 1500 employees which are endowed modern technology of today's global jewellery manufacturing (Yaşar, 2016, p. 7).

Istanbul is considered as the primary gold jewellery centre as well as other largest cities of Turkey, Ankara and Izmir, significantly contributes to the production as domestic processing and manufacturing bases. (Yaşar, 2016, p. 7).

2.5. Recycled Gold in Turkey

Turkey features a variety of large-scale refiners that refine recycled gold with numerous smaller manufacturers progress in gold refining and recycling as well. Turkey is considered as one of few countries that have numerous 'London Bullion Market Association' authorized gold refiner plants namely, Atasay Jewellery Industry and Trade Inc., Istanbul Gold Refinery and Nadir Metal Refinery are the well-accredited ones regionally (World Gold Council, 2015).

In this manner, having these developed organizations, Turkey has the advantage in the Middle East, where only Saudi Arabia has similarly authorized gold refineries in the region. Additionally, the worldwide recognition of 'London Bullion Market Association' authorized refining allows Turkish refiners ability to serve a broad variety of markets (World Gold Council, 2015).

Until Turkey has reached its capability, large-scale refinement was completed overseas. However, today in Turkey, this advantageous acquisition in the industry, the respective amount of gold imports are contributed to recycled gold which refers between 15 and 20 tonnes annually. It is obtained primarily from European markets as well as from other parts of the world. Mostly, the bulk of this gold is affined to fulfil local demand, whereas the remained is re-exported (World Gold Council, 2015).

According to the Thomson Reuters (2017), Turkey, Italy, and Russia hold significant scrap gold statistics regarding Europe, which the continent is the second biggest region for scrap supply, recorded a 9% increase in gold jewellery scrap reaching 323 tonnes and 339

tonnes in the period between 2014 and 2016. However, gold scrap flows eased by 4% last year to 326 tonnes again (Thomson Reuters, 2017, 2018 in press).

Table 2.1: Supply of Gold From Fabricated Old Gold Scrap in Europe in 2015 - 2017, (in tonnes)

Country	2015	2016	2017
Italy	68,9	70,4	69,2
Turkey	72,4	77,3	61,7
United Kingdom	30,4	38,2	41,9
Russia	37,9	34,1	35,7
Germany	23,1	24,7	24,4
Other Countries	90,7	94,8	92,9
Total Europe	323,4	339,5	325,8

Based on: *GFMS Gold Survey 2017, 2018* (Thomson Reuters, 2017, 2018 in press).

Table 2.1 shows Turkey's position in 2015 - 2017 regarding the supply of gold from fabricated old gold scrap in Europe (Thomson Reuters, 2017, 2018 in press). Regarding Turkey's position in the period between 2015 and 2016, statistically, the country reached the top place as the largest source of supply in the region was strengthened due to the weak monetary performance of Turkish Lira ensured that findings improved three times compared to the other major European markets (Thomson Reuters, 2017). However, dramatically, continuous weakness in the currency has caused Turkey to lose its place to Italy, former traditional scrap gold supplier in Europe (Thomson Reuters, 2018).

3. Foreign Trade of Turkish Jewellery Industry

After the removal of export barriers in 1983, Turkey began to show rapid progress in jewellery exports with the rise. Thus, the jewellery industry began to evolve. Respectively, allowance of Turkish Central Bank to import gold bullion in 1985 and the foundation of

Istanbul Gold Exchange made the gold market relieved with the opportunity to move further activities in terms of expanding the market.

Following this, the same year, gold bullion import authority was taken from the Central Bank monopoly and given to the Gold Exchange members of the private sector (Özbek, cited in Yaşar, 2016). This change has created important opportunities for the jewellery industry regarding the supplies of gold with global gold prices (Yaşar, 2016).

3.1. Imports of Jewellery in Turkey

Gold, as a raw material, is the most widely used product in the jewellery industry. In this sense, Turkey substantially imports serious quantities of gold as the recent statistics in 2015 shows that an average of 150 tonnes of gold imports was realized annually last 20 years until that year.

In 2015, the examination of the last 10 years of the import figures within the jewellery industry in Turkey clearly shows a steady increase between 2001 and 2008. However, jewellery imports were affected by the global crisis in 2008 and there was a significant decrease of around 46% compared to the previous year. In the period after the crisis, the import value increased again and in 2012, import figures reached the level before the crisis (Doğu Akdeniz Kalkınma Ajansı, 2015). In the last decade, gold jewellery import figures have recorded around US\$512 mn for the country (“TÜİK,” n.d.). Table 3.1, lists the monetary value of jewellery import in Turkey between 1995 and 2017. (Doğu Akdeniz Kalkınma Ajansı, 2015; “TÜİK,” n.d.).

Table 3.1: Jewellery Import of Turkey, data for 1995, 2000, 2005, 2010 and 2017 (in US\$)

	1995	2000	2005	2010	2017
Imports of Jewellery	9.189.755	73.633.908	238.031.838	398.188.032	512.188.366

Based on: *Kuyumculuk Sektör Raporu* (TÜİK, cited in Doğu Akdeniz Kalkınma Ajansı, 2015); *Dış Ticaret İstatistikleri* (“TÜİK,” n.d.).

Table 3.2 shows the top 5 countries of imports in the jewellery industry proceeded by Turkey. When the table is examined, three important points can be evaluated. Given the figures for the last 5 years ranking, the first interesting point of the table is that Italy and the United Arab Emirates are the countries which Turkey succeeded the largest import regularly. Secondly, other countries which Turkey succeeded the largest import also refer to the largest exporting countries which are explained more detailed below. These countries are the United States and the United Arab Emirates again. Lastly, the share of the jewellery imports is increased in Bolivia and Estonia respectively (Türkiye Cumhuriyeti Ekonomi Bakanlığı, 2018).

Table 3.2: Top 5 Countries of Imports in the Turkish Jewellery Industry, 2013 - 2017

Year	1st Ranking	2nd Ranking	3rd Ranking	4th Ranking	5th Ranking
2013	UAE	Italy	China	Hong Kong	Thailand
2014	UAE	Italy	China	India	Thailand
2015	Italy	UAE	China	Hong Kong	France
2016	Italy	UAE	Bolivia	Estonia	France
2017	Italy	UAE	Bolivia	Estonia	USA

Based on: *Kuyumculuk Sektör Raporu* (TÜİK, cited in Doğu Akdeniz Kalkınma Ajansı, 2015); *Mücevherat Sektör Raporu 2018* (Türkiye Cumhuriyeti Ekonomi Bakanlığı, 2018).

3.2. Exports of Jewellery from Turkey

In 2015, the examination of the last 10 years of the export figures within the jewellery industry in Turkey shows us that there has been a significant increase in export value over the years. Despite the fact that there was a decrease in the industry due to the global crisis after 2008, the industry has gained momentum again (Doğu Akdeniz Kalkınma Ajansı, 2015). In the last decade, gold jewellery import figures have been steadily improving which was recorded around US\$4 bn for the country last year (“TÜİK,” n.d.).

Table 3.3: Jewellery Export from Turkey, data for 1995, 2000, 2005, 2010 and 2017 (in US\$)

	1995	2000	2005	2010	2017

Exports of Jewellery	65.033.922	394.393.208	1.167.969.714	1.538.247.150	4.035.318.455
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Based on: *Kuyumculuk Sektör Raporu* (TÜİK, cited in Doğu Akdeniz Kalkınma Ajansı, 2015); *Dış Ticaret İstatistikleri* (“TÜİK,” n.d.).

Table 3.3 lists the monetary value of jewellery export in Turkey between 1995 and 2017 (Doğu Akdeniz Kalkınma Ajansı, 2015; “TÜİK,” n.d.). Statistically, while the share of exports within the jewellery industry in total exports was US\$65 mn in 1995, it was increased by around US\$1.5 bn in 2010 and by around US\$4.1 bn in 2014. There have been significant value increases recorded in jewellery exports in periods between 2000 and 2005 and periods between 2010 and 2014 (Doğu Akdeniz Kalkınma Ajansı, 2015).

Table 3.4 shows the top 5 countries of exports in the jewellery industry proceeded by Turkey (Doğu Akdeniz Kalkınma Ajansı, 2015). When the table is examined, there are main countries where continuously seen as important jewellery markets for Turkey. These countries are the United Arab Emirates, Iraq, Iran, the United States, and Hong Kong (Türkiye Cumhuriyeti Ekonomi Bakanlığı, 2018).

Table 3.4: Top 5 Countries of Exports in the Turkish Jewellery Industry in 2013 - 2017

Year	1st Ranking	2nd Ranking	3rd Ranking	4th Ranking	5th Ranking
2013	UAE	Iraq	Russia	Germany	Libya
2014	UAE	Iran	Iraq	Libya	USA
2015	UAE	Iran	Iraq	USA	Libya
2016	UAE	Iraq	Iran	USA	Hong Kong
2017	UAE	Iraq	USA	Hong Kong	Germany

Based on: *Kuyumculuk Sektör Raporu* (TÜİK, cited in Doğu Akdeniz Kalkınma Ajansı, 2015); *Mücevherat Sektör Raporu 2018* (Türkiye Cumhuriyeti Ekonomi Bakanlığı, 2018).

3.3. Largest Turkish Jewellery Exporters

Jewellery Exporters' Association declares the relevant list of the most active and successful Turkish jewellery exporter companies annually. Currently, the Association has more than a thousand member companies which are the fundamental companies of the

industry regarding the jewellery exports. Table 3.5 shows the most successful Turkish jewellery export companies in 2017 (“Year 2017,” n.d.).

Table 3.5: The Most Successful Turkish Jewellery Exporter Companies in 2017

Rank	Company Name
1	İSTANBUL ALTINONS KUYUMCULUK GIDA SAN VE TİC LTD. ŞTİ
2	KAYAR KUYUMCULUK VE DIŞ TİCARET LİMİTED ŞİRKETİ
3	İSTANBUL ALTIN RAFİNERİSİ A.Ş.
4	DÖRT DOKUZ KUYUMCULUK KIYMETLİ MADENLERİ SAN VE TİC. A.Ş.
5	ARPAŞ İHRACAT İTHALAT VE PAZARLAMA A.Ş.
6	DURAMELT KUYUMCULUK KIYMETLİ MADENLER SAN. TİC. LTD. ŞTİ.
7	RİGAKU KUYUMCULUK GIDA İNŞ. TEKSTİL SAN. VE TİC. LTD. ŞTİ.
8	SÖZER KUYUMCULUK SANAYİ VE TİCARET A.Ş.
9	KUKA KIYMETLİ MADEN İNŞ. TAHHÜT SAN. VE TİC. LTD. ŞTİ.
10	MİORO HEDİYELİK EŞYA VE EL SANATLARI SAN. VE TİC. A.Ş.
11	MİDAS PAZARLAMA VE DIŞ TİCARET A.Ş.
12	BOĞAZIÇI HEDİYELİK EŞYA VE EL SANATLARI SAN. VE TİC. A.Ş.
13	NADİR DÖVİZ VE KIYMETLİ ÖADEN TİC. A.Ş.
14	NADİR METAL RAFİNERİ SAN. VE TİC. A.Ş.
15	ELİT İST. ALTIN VE GÜMÜŞ SAN. TİC. LTD. ŞTİ.
16	GESSERT ALTIN PAZARLAMA VE DAĞITIM A.Ş.
17	İSTOR KUYUMCULUK SANAYİ VE TİCARET LTD. ŞTİ.
18	MİDAS HEDİYELİK EŞYA SANAYİ VE TİCARET A.Ş.
19	ARDA KUYUMCULUK SANAYİ VE TİCARET LTD. ŞTİ.
20	KOÇAK GOLD KUYUMCULUK DIŞ TİCARET A.Ş.

Based on: *Yearly Jewellery Export Figures by Subgroup & Country* (“Year 2017,” n.d.).

Among over a thousand member firms of Jewellery Exporters' Association, prestigious and important firms of Turkish jewellery industry are participating in this industry for its leading and advantageous position in the global gold and jewellery market. Building on the historical and cultural heritage over centuries, increasing product diversity and alternative designs are highly offered to the global jewellery industry with superior product quality and jointly developing production capacity reflected the Turkish jewellery industry become by far the leading ones with momentum earned in the last decade (“Mücevher İhracatçıları Birliği,” n.d.).

Chapter 3: Dynamics of Gold: Gold Prices and Governmental Intervention in Turkish Jewellery Market

In this chapter, firstly, gold price trends and historical price change figures will be explained and analyzed according to the most relevant published releases which are focusing on the influencing factors and connecting with developments occurred in the global level. Secondly, dynamic gold prices will be analyzed through the consequences in the Turkish jewellery market. Then, governmental influence and initiatives for boosting the jewellery industry will be explained in the light of the development of the industry in Turkey. Lastly, an educational approach of the jewellery industry will be defined according to the current Turkish educational system.

1. Gold Price Trends and Analysis

Gold was constructing the basis of the monetary system in the period between 1870 and 1930. In the Bretton Woods system, between 1944 and 1973, it acts as the representation of being a reserve tool that was fully convertible to the US Dollar. Since the beginning of the 1970s, US Dollar convertibility has come to an end, as a result, gold lost out its exchanging characteristic and considered more as an investment tool and main element of central bank holdings (Gültekin and Hayat, 2016).

Today, gold is used for protection against inflation. It is also reliable in political and economic uncertainty and is a financial investment Vehicle. For these reasons, it has an important place in the reserves of gold central banks.

In terms of supply, the total annual world gold production amount and costs, the political environment in the gold producer countries and developments in their balance of payments are highly considered as the main contributing factors to the gold prices. Additionally, gold sale figures of central banks and gold mining producer countries are effectively contributing to the gold price movements. Also, the costs that mining companies have to meet for producing are evaluated as a root level for the changing gold prices (Vural, 2003).

In terms of demand, economic and political developments in the world, fluctuations in foreign stock exchange markets, inflation and devaluation expectations and oil prices are highly considered as the main contributing factors to the gold prices. Additionally, monetary policies and interest rates of central banks, as well as their reserve management and interventions into the financial markets, are other factors determining the changing gold prices (Vural, 2003). Indeed, regarding the factors affecting gold prices, it is noteworthy that demand factors affect gold prices more after the year 1971 (Vural, 2003).

Regarding the evaluation of the factors related to the gold price changes, short-term and long-term determinants hold the key for rapid uptrends. In the short-term, there are two main indicators affecting gold prices in a devastating sense.

Firstly, as a general behaviour, loss of trust and reliability by investors to financial markets when global financial markets are interrupted and the global economy is in recession. For this reason, investors are appealing to other markets which do not taken into account as unpredictable, such as the gold market. That is to say, the gold market is counted as an extreme type of investment and not favourable against traditional assets if the financial market is unstable (Shafiee and Topal, 2010).

Secondly, contingent devaluation of the US Dollar against other currencies and inflation due to the increasing oil prices are the financial reasons cause investors to hedge gold against US Dollar fluctuations. These events create large handicaps to the gold trade and cause gold losing its potential value in the short-term market against inflation (Shafiee and Topal, 2010).

In the long-term, there are three main causes affecting gold prices. Primarily, compared to the previous decade mine production has progressively decreased in recent years. Additionally, increasing gold mining costs resulted in difficulties for the gold exploration and finding prospective deposits as a result world gold mine production reduced (Shafiee and Topal, 2010).

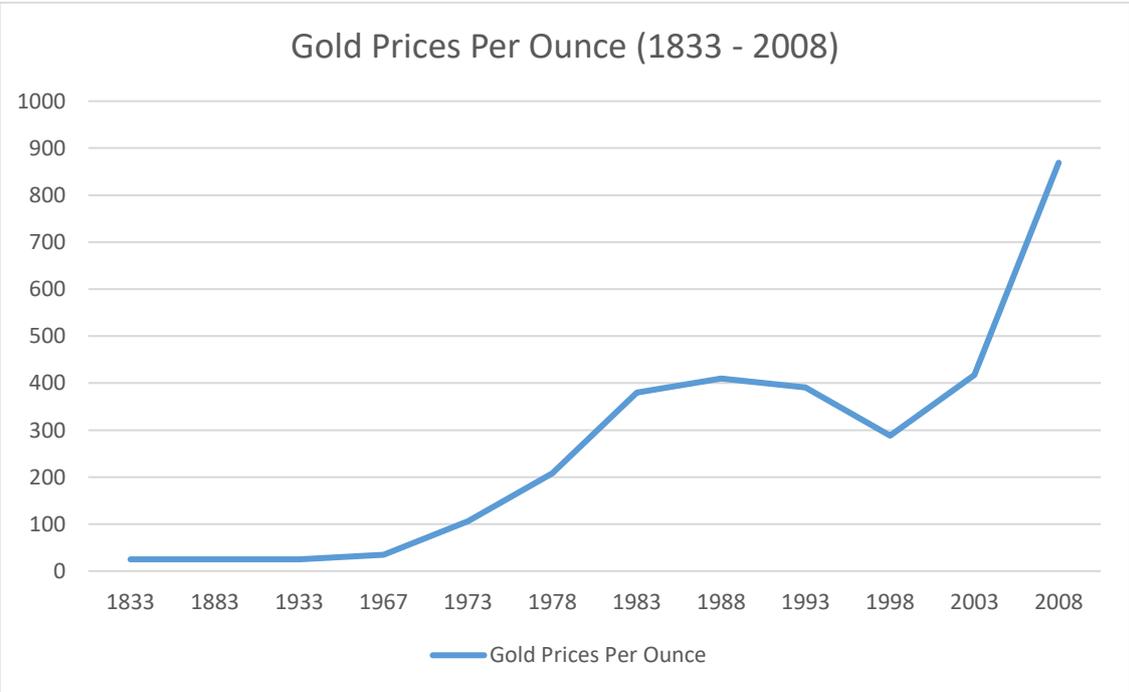
Also, when reasonable expectations of institutions and retail investors are facing uncertain situations of the market, investing in the gold and keeping as stable investment tools becoming a priority for them, so that lead volatilities in gold prices due to the increasing

preferences of keeping gold in unstable financial markets. Because, as an investment during unstable periods, keeping gold is more preferential due to the strong liquidity of the gold itself as well as being marketable in this sense (Shafiee and Topal, 2010).

Finally, developing financial options in terms of the gold market has changed investing in gold in an easier sense. Exchange Traded Funds have been used by investors with a convenient approach which stimulates the demand side of gold as it is an easily traded investment tool with other stock and share investment options (Shafiee and Topal, 2010).

Briefly, a stable period between 1833 and 1933, gold prices were standing at around US\$20 per ounce until the Roosevelt plan in 1934 which set the US dollar conversion of gold fixed the gold price at US\$35 in Bretton Woods System. This trend remained unchangeable until 1967 when the gold price became independent and gold started to be freely traded in the global market which lead the gold prices rapidly fluctuating and volatile (Mills, cited in Shafiee and Topal, 2010). Historically, gold prices can be evaluated into two periodic jumps within substantial increases as well as milestones in the gold market.

Graph 1.1: Change in Gold Prices per Ounce between 1833 and 2008 (in US\$)



Based on: *An overview of the global gold market and gold price forecasting* (Shafiee and Topal, 2010).

Graph 1.1 shows the change in gold prices per ounce between 1833 and 2008 (Shafiee and Topal, 2010). At the beginning of the year 1980, the gold prices had substantial increases. These were influenced by instabilities in the monetary system and allegations of returning to the gold standard again. Gold has risen to US\$677 per ounce in this period. However, this effect was not so effective and had a downward trend only in one year (Yıldırım, cited in Topçu, 2010).

The first historical gold price jump occurred in 1980, when gold prices appear at US\$300 per ounce only in a short period and significantly continued to leap further. The first rise occurred and increased by a range between US\$75 per ounce and US\$85 per ounce however the final jump was recorded with a total of US\$160 in three days (Shafiee and Topal, 2010).

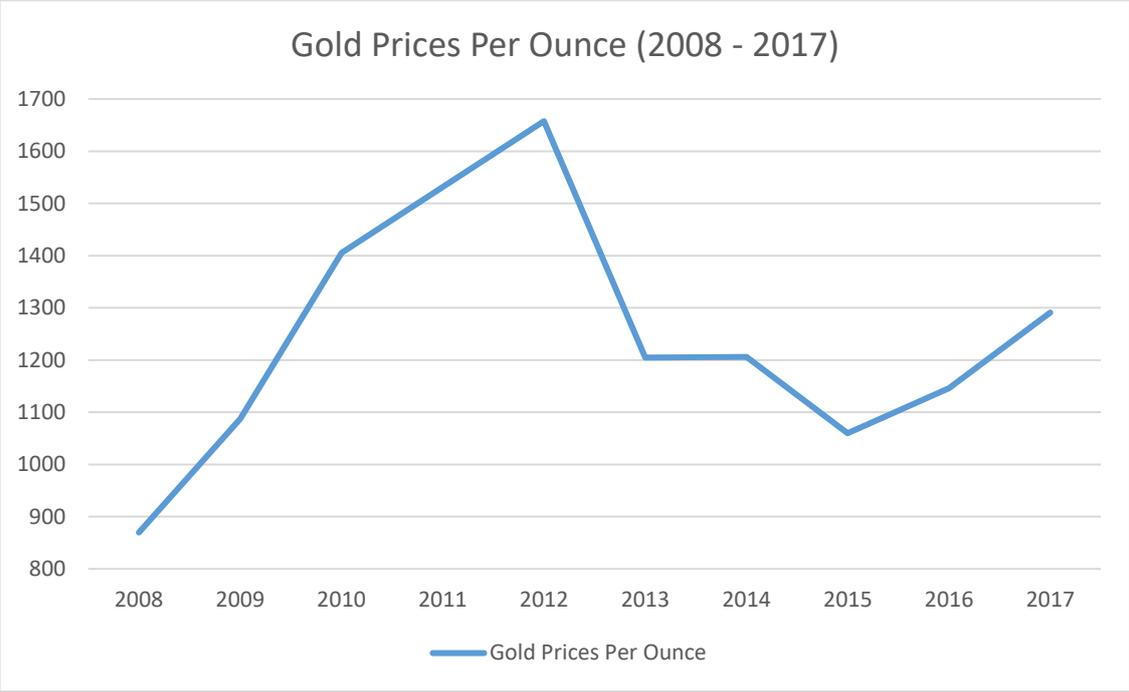
Regarding the political tensions and economic developments in the 1980s, short-term fluctuations for gold prices have been observed. The Iran-Iraq war in the 1980s and the Gulf crisis that came out in this period caused the prices to have short-term increases (Topçu, 2010).

However, due to the short-winded structure of the war, the impact of the Gulf crisis had a short-term effect on rising gold prices. Additionally, the recession in global production and disintegration of the Soviet Union which caused milder political tension and the ongoing recession in global production caused fall into a decline in gold prices again (Vural, 2003).

In the recent past, gold prices have shown similar rises again which were captured in the 1970s. In this period, reasons for the price fluctuations are considered as the political unrest and economic uncertainties such as the occurrence of the terrorist attacks on September 11, 2001, military operations to Iraq in 2003 and the rising tensions in the Middle East (Topçu, 2010).

The second historical gold price jump started in the year 2008, which can be considered as an ongoing trend, resulted as a market-based increase by averagely US\$700 around 6 years. The most substantial increase in gold price was around US\$1011 which recorded on the March 2008, with the highest daily increase ever of gold price history which was around US\$70 (Shafiee and Topal, 2010).

Graph 1.2: Change in Gold Prices per Ounce between 2008 and 2017 (in US\$)



Based on: *World Gold Council 'Gold price in a range of currencies since 1978'* (“Gold Prices,” n.d.).

Graph 1.2 shows the recent change in gold prices per ounce between 2008 and 2017. Regarding to the implications, major developments of the global economic crisis in 2008 victimised American Investment Bank, which can be counted as the first victim of the global crisis, had a financial shortage in 2008, provoking the financial markets and gold prices were reached a record level of US\$1,011 per ounce (Gold Investment Digest, cited in Topçu, 2010).

Another consequence was recorded with the mortgage crisis occurred in the United States, the American Treasury and the Central Bank declaration of the rescue plan for two giant mortgage credit corporations in 2008, another record level of gold prices was on the books with US\$986 per ounce. Although the following trend was lowering gold prices to US\$740 per ounce, the US\$700bn rescue plan was rejected in the American House of Representatives, as a result, gold prices reached US\$905 per ounce. Additionally, the decision of interest rate deduction in central banks of the countries respectively, England, the United States, the EU, Sweden, Canada, Switzerland and China gold prices keep it’s stability that year (Gold Investment Digest, cited in Topçu, 2010).

Following the global crisis in 2008, gold prices continued to be bouncing with its jumps respectively, US\$1000 per ounce in 2009, US\$1400 per ounce in 2010. The aftermath of the rising gold prices, as a historical global record, gold prices reached its historical peak at US\$1800 per ounce in 2011. The main reason of this historical rise was caused by the explanations of former Federal Reserve System (FED) president Ben Bernanke that he gave signals about the third monetary incentive program within his concerns regarding the global debt crisis. At the end of that year period, gold prices, reached at a level of US\$1,910 per ounce which was demonstrating the most impressive monthly performance ever of the gold prices after 1999 (Bayhan, 2018).

More recently, during the period in the year 2013, gold prices kept a downtrend due to the new explanations of former FED president Ben Bernanke that his crucial statements were predicated on the improvements for the US economy. His discourse was clearly telling the prospective improvements in the economy as better than expected could end the monetary expansion from the crisis period. These events caused a drop in gold prices at the level of US\$1192 per ounce on 28 June 2013 (Bayhan, 2018).

In the last decade, periodical statements by former FED president Bernanke led to a drastic decline in gold prices where investors were shocked and a decrease in gold price went on incessantly. However, on the other hand, political and military crises in the Middle East and the rise of the Arab Spring are believed as the events which balance the prices of the gold against FED statements (Bayhan, 2018). According to the World Gold Council (2018) statistics, the gold price has closed the period of the year 2017 at a level of US\$1,291 per ounce.

2. Influencing Factors Affecting Gold Prices

It is noteworthy that in the international finance literature, there are different opinions about the factors affecting the gold prices based on econometric analyzes. Prominent influencing factors affecting gold prices are the relationship between gold and other dependant scopes are US Dollar, inflation, Crude-oil, interest rates and silver (Vural, 2003).

2.1. Relation Between Gold and US Dollar

Gold prices and US Dollar have been in an opposite-sense and closer relationship. This compatibility is expressed in the international market with the gold price per ounce is calculated upon the US Dollar as a reason. In relation to the decrease in US Dollar value gold prices are increasing oppositely. When the US Dollar gains value in accordance with the value of the national currencies, thereby purchase power of gold decreases as well as a withdrawal of investors into the gold market occurs. This is additionally causing pressure on gold prices and leading to a decline in gold prices (Ghosh et al., 2002, cited in Vural, 2003).

2.2. Relation Between Gold and Inflation

Gold is considered a protection tool against inflation so that there is a positive correlation between inflation rates and gold prices. Substantial effects of inflation, which are lowering the value of money and reducing purchasing power in the market, causes an increasing and continuous protection for the gold value. Additionally, these reasons result in the rise of the gold value in the inflationary environment so that the gold prices rise (Harmston, 1998, cited in Vural, 2003).

2.3. Relation Between Gold and Crude-Oil Prices

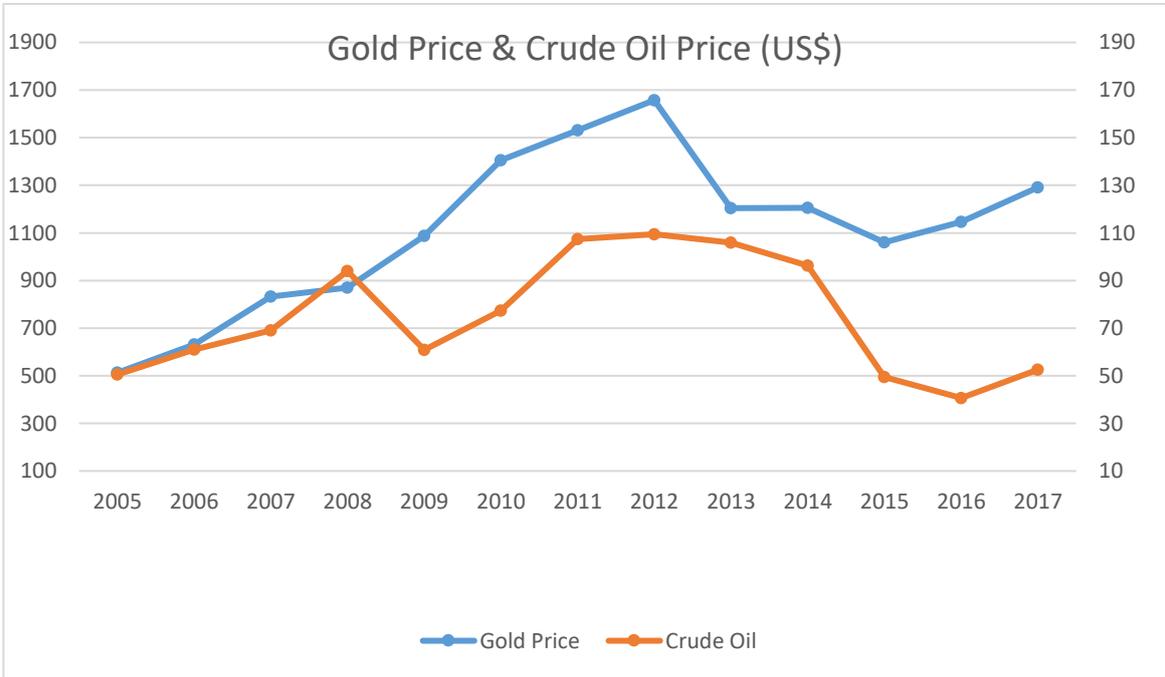
In terms of the global financial market, oil prices, which is expressed and traded in the US Dollar, considered as influencing with a positive impact on the gold prices. In general, the increase in oil prices leads to an increase in gold prices, which is generally linked to two fundamental factors. First, the OPEC countries, which consists of major oil producer countries worldwide, their revenue is obtained in US dollars. Considering OPEC member countries' major role in the world gold demand, an increase in the oil price causes a parallel increase in the gold price as well (Vural, 2003).

On the other hand, there are great numbers of countries in the world as the oil importers, from the perspective of the input costs, a rise in oil prices means an inflationary pressure globally. In this sense, protectionist characteristics of the gold against inflation lead

another increase in world gold demand in parallel to the rise in oil prices and causes an expectation in the gold value (Vural, 2003).

Consequently, there is a positive correlation between gold and crude oil prices. Crude oil and gold continue to break the consistent trend of prices recorded between 2005 and 2017. Graph 2.1 shows the annual trend of gold and crude oil prices between years 2005 and 2017 (“Average Annual OPEC,” n.d; “Gold Price,” n.d.).

Graph 2.1: Change in Gold Prices per Ounce and Crude Oil Prices per Barrel between 2005 and 2017 (in US\$)



Based on: *World Gold Council ‘Gold price in a range of currencies since 1978’* (“Gold Price,” n.d.); *Average annual OPEC crude oil price from 1960 to 2018* (“Average Annual OPEC,” n.d).

In 2007, oil prices reached over US\$100 per barrel which the president of OPEC said that the expected oil prices at US\$200 per barrel were possible depending on the continuous US Dollar devaluation with respect to other currencies at that time.

Similarly, the gold price has followed a counterpart trend and reached a maximum price of around US \$930 per ounce in the same year. Afterwards, the price change trends

between gold prices and crude oil prices show us continuous and compatible trends (Shafiee and Topal, 2010; “Average Annual OPEC,” n.d; “Gold Price,” n.d.).

2.4. Relation Between Gold and Interest Rates

From the investment perspective, if it is considered that there are two alternative choices for investors which are investing in gold or investing in interest rates, a rise in interest rates increases the opportunity cost of keeping gold as well. So, there might be an escape from investing in gold and a reduction in gold prices. As a result, it is considered that there are a reverse relationship and compatibility between the interest rates and gold prices (Vural, 2003).

Eventually, the price of gold, which has been considered as one of the most reliable investment instruments among the investors, has been fluctuating due to the emergent economic and political instabilities in the international arena. These fluctuations affect both international markets and domestic economies significantly. Such instability of the price of gold has also been exhibiting a negative impact on Turkey's economy and Turkish jewellery industry along with the global economy.

2.5. Relation Between Gold and Silver

Two of the most demanded metals in the precious metal market are gold and silver. Silver, which is considered as a substitution of gold for investors, is considered to be the closest replacement of gold in the electronics sector and dentistry. Therefore, the positive relationship between gold and silver prices has been the subject of the relationship between gold and silver prices (Vural, 2003).

According to Vural's (2003) thoroughly research, fluxional opinions of several authors about the relationship of gold and silver prices implied based on different perspectives. For example, it is alleged that there is a positive relationship between gold and silver prices when considering the data between years 1971 and 1994 (Chan and Mountain, 1988, cited in Vural, 2003). On the other hand, due to the reason that gold and silver markets are different and their

trade is figured in different branches of the industry led to gold and silver prices are determined by the diversified demand and supply conditions systematically which don't affect price of gold directly (Ciner, 2001, cited in Vural, 2003).

3. Gold Price and Jewellery Market in Turkey

Gold trade and jewellery market in Turkey has gained a liberal construction through different stages and periods. Importantly, the implementation of free-market transition policies in every stage of Turkey's economy as well as the decisions taken for structural changes have been important in the Turkish gold market and jewellery industry (Gökdemir and Ergün, 2007).

Especially, thanks to the decisions taken in the years 1983 and 1984, imports of gold have been freed at a coherent global level within the specified principles. Similarly, these decisions have given the authority to the Turkish Central Bank, which allows the institution for determining the gold value and foreign exchange rates to the same initiative (Gökdemir and Ergün, 2007).

Central Bank of Turkey, has introduced the Exchange Equivalence of Gold Market founded in 1989. This development is taken into account as the most important and influential factor regarding the liberalization of the Turkish gold market. However, the successful outcome of these applications was not enough for continuous achievements due to the inability of ending the problems of the jewellery industry at that time. One of the most important problems was having the Central Bank as the only institution authorized to import gold in the country (Gökdemir and Ergün, 2007).

Consequently, resolutions in 1993 led the gold prices in Turkey to be obtained in parallel to the global prices as well as freed the import and export of gold compatible with the global financial market. Finally, the Istanbul Gold Exchange was introduced and the organizational processes of the institution officially completed and operationally started in 1995 (İstanbul Altın Borsası Başkanlığı, cited in Gökdemir and Ergün, 2007).

After this stage, Turkey has become freely active in world gold imports and exports but as a result, Turkey's integration with the international gold market became more vulnerable to the instabilities of the international markets as well as the global gold market (Gökdemir and Ergün, 2007).

Regarding the gold market in Turkey, factors determining the price of gold can be evaluated by taking in the foreign and domestic sense. For example, the increase or decrease in the oil prices, production-related decisions in terms of quota taken at OPEC meetings, the political turmoil in the oil-producer countries and similar international dynamics directly affect the prices of crude oil, thus the supply and demand of the gold (Gültekin and Hayat, 2016).

Additionally, volatilities of the foreign exchange rates in the World stock markets might suffer changes at any time likewise dynamics of the gold, so that the economic incentives of the countries in Eurozone and countries such as the United States and Japan, might influence the foreign exchange rates easily. In this sense, changing perspectives of these countries in terms of their foreign trade statistics, inflation estimations and reviews, unemployment rates and industrial production directly affects foreign currency exchange market in Turkey as well as the gold and the jewellery market (Kültürcü, 2014 cited in Gültekin and Hayat, 2016)

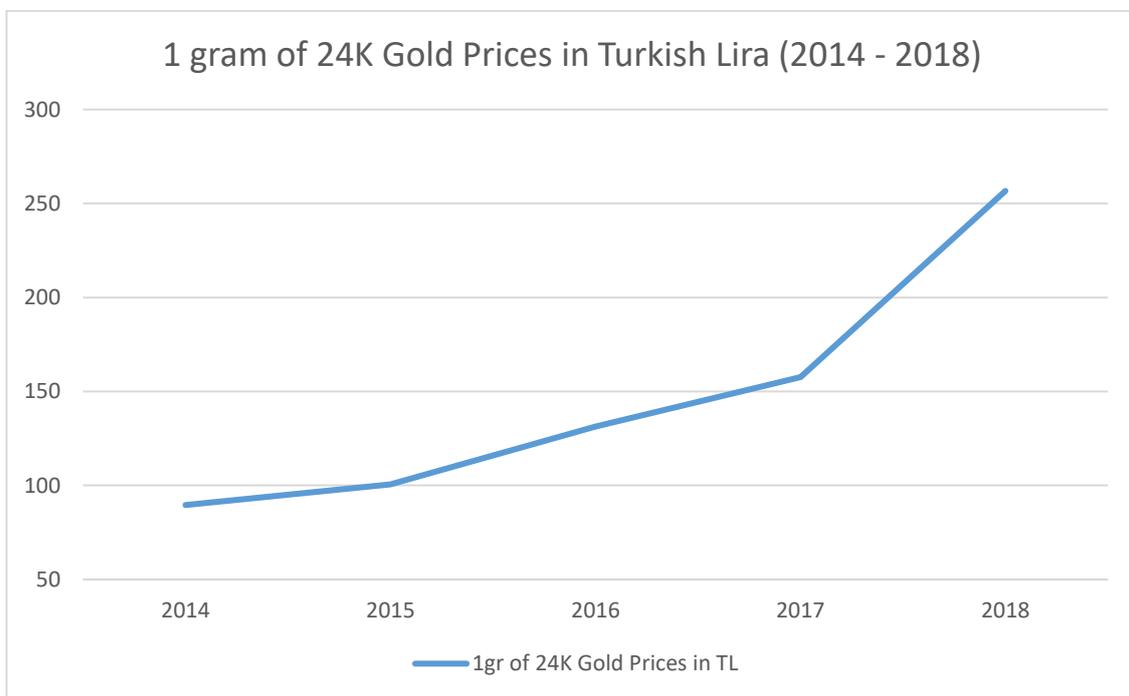
It is important to highlight that apart from the crucial correlation between crude oil prices and gold prices, main actors of the Turkish jewellery industry have to monitor the ounce volatilities in European gold exchanges as well as the recent developments applied to the Turkish economy by the Central Bank of Turkey rigorously (Gültekin and Hayat, 2016).

3.1. Domestic Gold Price in Turkey

Graph 3.1 shows the 24 karat gold prices per gram in Turkish Lira between the years 2014 and 2018. Especially from the end of 2013 until today, there has been a substantial increase in the gold prices in the domestic market.

One of the first causes of this eventual rise is the residual geopolitical risks in the global scale which led the gold price per ounce at a level of US\$1,291 per ounce. Secondly, the high amount of current foreign debt and deficit of Turkey creates economic volatility which led the Turkish Lira to lose its value against the US Dollar. As a result, these occurrences cause the domestic gold price per gram two times faster than the global market (“Dört Soru, Dört Cevap: Altın,” 2017).

Graph 3.1: Change in the Domestic Gold Prices between 2014 and 2018 (per gram in Turkish Lira)



Based on: *Borsa İstanbul Kıymetli Madenler Piyasası Referans Fiyatları ve Kur Bilgileri* (“Borsa İstanbul,” n.d.).

In 2014, when the global gold prices were dropped averagely around 45% from US\$1,900 to US\$1,080 per ounce, at the same time, currency conversion of Turkish Lira to US Dollar was increased around 115% from US\$1.4 to US\$3 which led the domestic gold prices rising in Turkey. In other words, while the gold value decreased globally, there was a substantial increase domestically due to the weak monetary performance of Turkish Lira against US Dollar (“Altın Fiyatları Türkiye’de Neden,” 2015).

Over the last decade, a similar scenario occurred again in the country and recently while the global gold prices have been in a downward trend, domestic prices were

interestingly increased. According to the Borsa İstanbul (2018) statistics domestic 24 karat gold price has closed the period of August 2018 at a level of 256.7 TL per gram (“Borsa İstanbul,” n.d.).

3.2. Gold Price and Jewellery Consumption in Turkey

Over the last decade, local jewellery consumption did not perform well in 2017, because of the weakening Turkish lira which highlighted the substantial decrease against the US Dollar, with the local lira gold price suffering in a considerable extent (Thomson Reuters, 2018). The weaker currency was an operation tool of the widening accounting deficit and also the in-progress uncertainty due to the political and economic atmosphere. So that, this price impact, in addition to double-digit inflation, severely wedged discretionary defrayal for an oversized proportion of the population, particularly for jewellery market wherever the merchandising prices weren't as high as other purity alternatives (Thomson Reuters, 2018).

3.3. Gold Price and Jewellery Imports in Turkey

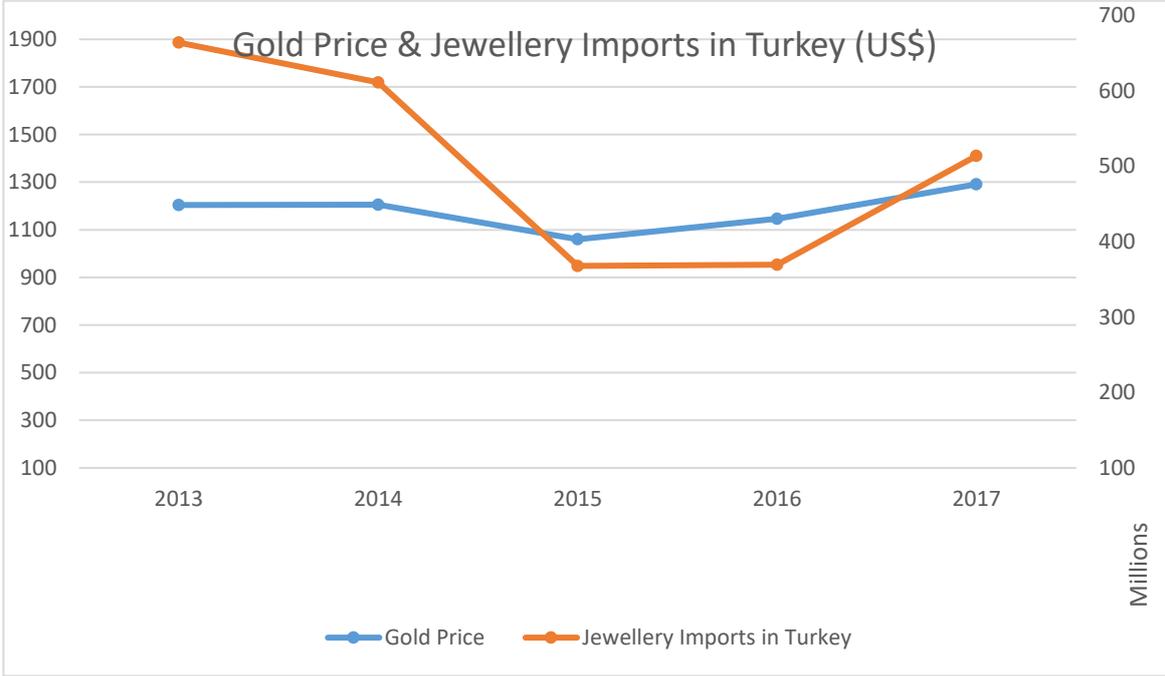
In the wake of the financial liberalization after 1989, Turkey has been following the recent developments within the global gold trade as an affixed country in the international market. Especially, elevations and volatilities in the gold prices affect Turkey's gold import and exports figures significantly (Gökdemir and Ergün, 2007).

Regarding the slower volatilities in global gold prices, the demand for gold in Turkey still shrank and jewellery imports were declined compared to the previous period. Graph 3.2 shows the change in gold prices per ounce and jewellery imports of Turkey in the US Dollars ("Gold Price," n.d; Türkiye Cumhuriyeti Ekonomi Bakanlığı, 2018).

In comparison to the changes in gold prices per ounce and the jewellery imports of Turkey in US Dollars, while there was a stable position for the global gold prices at the level of US\$1200 per ounce between years 2013 and 2014, jewellery imports in Turkey were recorded a 9% decrease.

Next period between the years 2014 and 2015, while the global gold prices were slightly decreased at the level of US\$1000 per ounce, jewellery imports in Turkey has recorded substantial negative figures with 65% decrease. Over the next period, while the global gold prices increased at the level of US\$1160 per ounce again, jewellery import figures could not heal its shrinking trend in short time.

Graph 3.2: Change in Gold Prices per ounce and Jewellery Imports of Turkey in the US Dollar (in US\$)



Based on: *World Gold Council 'Gold price in a range of currencies since 1978'* ("Gold Price," n.d.); *Mücevherat Sektör Raporu* (Türkiye Cumhuriyeti Ekonomi Bakanlığı, 2018).

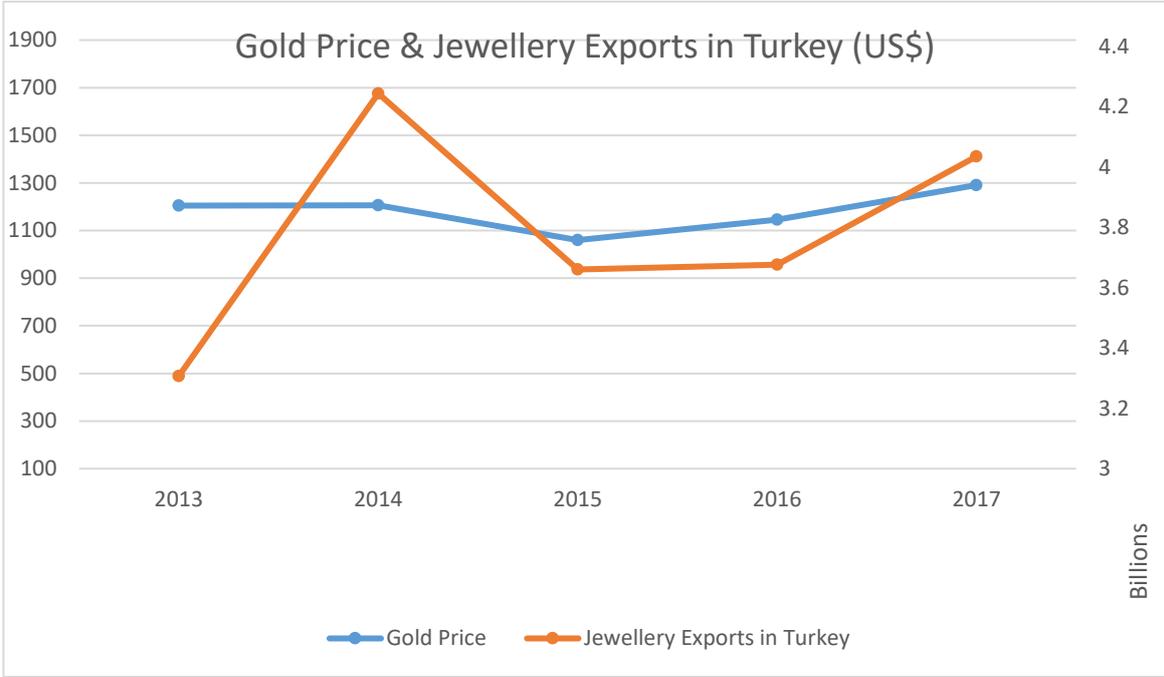
However, over the recent period between years 2016 and 2017, there were healthier jewellery import figures with %28 increase while the global gold prices per ounce were increased at the level of US\$1290 per ounce.

3.4. Gold Price and Jewellery Exports in Turkey

Fluctuations in gold prices, especially the increases had a significant impact on the gold trade in Turkey (Gökdemir and Ergün, 2007). Graph 3.3 shows the change in gold prices

per ounce and jewellery exports of Turkey in the US Dollars (“Gold Price,” n.d; Türkiye Cumhuriyeti Ekonomi Bakanlığı, 2018).

Graph 3.3: Change in Gold Prices per ounce and Jewellery Exports of Turkey in the US Dollar



Based on: *World Gold Council ‘Gold price in a range of currencies since 1978’* (“Gold Price,” n.d.); *Mücevherat Sektör Raporu* (Türkiye Cumhuriyeti Ekonomi Bakanlığı, 2018).

In comparison to the changes in gold prices per ounce and the jewellery imports of Turkey in US Dollars, while there was a stable position for the global gold prices at the level of US\$1200 per ounce between years 2013 and 2014, jewellery exports in Turkey were increased with 28%.

Next period between years 2014 and 2015, while the global gold prices were slightly decreased at the level of US\$1000 per ounce, jewellery exports in Turkey has recorded a calmer decrease with %15 if compared to the substantial decreases within import figures of that year.

Over the next period, while the global gold prices increased at the level of US\$1160 per ounce again, jewellery export figures stand with a similar outcome which means that keeping the decreased statistics of the previous year.

However, over the recent period between years 2016 and 2017, jewellery import figures were slightly increasing with %9 increase while the global gold prices per ounce were increased at the level of US\$1290 per ounce.

4. Governmental Actions Taken for the Industry

Under the harmonious support of the Turkish government, associations and stakeholders working in collaboration with the Turkish gold market, Turkey's position in the global gold market has become at the top five among the main gold producer countries and ensured the Turkish jewellery industry to gain an influential momentum and a stable development within the industry.

4.1. Central Bank of Turkey and the Gold Market

As noted earlier, the gold market in Turkey has gained a steady momentum just after the abolition of the export ban in the 1980s. In this sense, the Central Bank of Turkey has been playing a key role in the evolution of the jewellery industry and gold market as being the early authority for decision-making within the industry. More specifically, from a governmental perspective, the Central Bank of Turkey is the preliminary decision-making body which was assigned by the government in order to have permission to import gold bullion (Vural, 2003).

Nevertheless, the control to determine the price of foreign currencies and gold against the Turkish Lira was given to the Central Bank of Turkey in 1989. Thanks to the permission, an official gold market was established in Turkey first time in Republican history. Also, the establishment of the gold market brought the costs of the jewellery industry to the same level as other jewellery manufacturer markets around the world (Vural, 2003).

4.2. Foundation of Istanbul Gold Exchange

After the liberalisation of the gold trade in Turkey, the Istanbul Gold Exchange was established as an organized market in 1993. Regarding to the main elements of the exchange, there are two main sequences in terms of the precious metal market in Turkey namely

“Precious Metal Market” which is the spot market that gold, silver and platinum are traded and “Precious Metal Loan Market” which is the loan trading market based on the same metal products (Türkiye Sermaye Piyasası Aracı Kuruluşları Birliği, 2010).

Within the spot market, there are 83 member bodies which were consisted of 22 banks, 32 authorized establishments, 21 precious metal intermediate establishments and 8 precious metal production companies available. Within the loan market, there are 7 banks, 1 authorized institution and precious mining agency available (Türkiye Sermaye Piyasası Aracı Kuruluşları Birliği, 2010).

Through impressive efforts of governmental authorities, the change of capital market law (Sermaye Piyasası Kanunu) took place at the end of 2012 and all the exchange markets in Turkey were merged under the authority of Istanbul Gold Exchange since that year. Precious metals and precious stones market were also evaluated in this context. Regarding the regional sense, Istanbul Gold Exchange is currently the financial market in the region within continuous projects and the scope of being a regional centre for precious metals and precious stones market centre (İstanbul Ticaret Odası, 2015, p.17).

Istanbul Stock Exchange is estimated to be the only stock market in the world which allows the daily exchange as well as an early exchange of precious metals (İstanbul Ticaret Odası, 2015, p.17).

Additionally, as a result of consecutive efforts of the government, precious stone and metal market has been structured with the adoption of bag law in 2014. So that the trade of precious stones and metals imported and traded between the stock exchange members has been kept as an exception from tax regulations, thus activated (İstanbul Ticaret Odası, 2015, p.18).

4.3. Foundation of Jewellery Exporters' Association

Through substantial efforts of Turkey Ministry of Economy, Jewellery Exporters' Association established under the authority of Istanbul Mining and Metals Exporters '

associations in July 2003 with the decision of the Turkey Council of Ministers (“Mücevher İhracatçıları Birliği,” n.d.). The main aim of the Turkey Ministry of Economy and the Turkey Council of Ministers was to constitute a semi-public backing to the jewellery industry and its global expansion with mutual benefits between the industry and the Turkish economy. In this context, according to the Jewellery Exporters’ Association (“Mücevher İhracatçıları Birliği,” n.d.), the main objectives of the Jewellery Exporters’ Association are:

- Ensure a better introduction of the industry in the international arena, to establish industrial collaborations.
- Enlarge the export volume of the industry by observing the interests of the country.
- Guide the export-oriented activities of member firms.
- Organize the professional relations and activities of exporters as well as boost efforts to find solutions to any problems related to exports.
- Ensure that foreign buyers meet with the right producers in Turkey.
- Follow the latest regulations in the trade regulations of international law and importer countries.

4.4. Governmental Backing of Jewellery Exhibitions and Fairs

Regarding the crucial purposes of governmentally backed Jewellery Exporters’ Association, the association organizes seminars, competitions, fairs and exhibitions to promote Turkish jewellery products to world markets as well as arranges the acquisition of delegations from potential export markets to Turkey from various countries (“Mücevher İhracatçıları Birliği,” n.d.).

Through active participation and backing of Turkey Ministry of Economy, one of the most important organization among the World jewellery industry exhibition calendar, Istanbul Jewellery Show, has been host by Turkey and accommodate buyers from around the World (Mücevher İhracatçıları Birliği, 2016).

Every year, Jewellery Exporters’ Association organizes the Istanbul Jewellery Show with the support of the Ministry of Economy and within the framework of the acquisition

committee and qualified buyers. For example, in 2016, the total number of stores and representatives of keychains approaching were around 8000 which visited the show at that year (Mücevher İhracatçıları Birliği, 2016).

Besides the participants from Turkey jewellery industry, world jewellery industry professionals from over 110 countries around the world closely followed the Istanbul Jewelry Show in 2016. Despite the global collapse in economies with ongoing political and economic crises, the show has hosted over 46 thousand local and foreign sector professionals in both the March and October fairs from a total of 117 different countries at that year (Mücevher İhracatçıları Birliği, 2016).

4.5. Governmental Backing of Public Education of Jewellery Design

Specifically, within the jewellery industry, in terms of more efficient use of the country's potential for precious metals production, processing of stones and the design process there is an important need for the well-trained workforce. Although the training programs to meet this demand of the industry are still demanding in Turkey, there has been a benignant collaboration between governmental bodies and industrial authorities since the early capitalisation period of Turkey (Doğu Akdeniz Kalkınma Ajansı, 2015, Hatipoğlu, 2005).

Early roots of an educational aspect for the jewellery industry in Turkey started with the foundation of “Gemology and Jewellery” subject in educational institutions in 1984 and the first serious introduction of this program was first introduced in Istanbul Jewellery Fair, 1986, which it was the first year of this exhibition. There were great praises to this educational approach for the industry by the Turkish jewellers and the various press publications in the following periods. About 10 years after the educational introduction in the industry, the importance of the educational attempts was obtained crucially by understanding how necessary and essential for the industry (Hatipoğlu, 2005).

These steps taken by the universities have attracted the attention of the Turkey Ministry of Education and have been instrumental in the commencement of jewellery training in many professions and industrial vocational high schools as well. In addition, Turkey

Ministry of Education have designed, education centres and apprenticeship training centres for the middle and high school levels of national education effectively (Hatipoğlu, 2005).

Currently, for the purpose of the development within the industry, there are numerous universities are offering jewellery design, cultivating and processing branches have been available dynamically at 24 universities in 20 different cities in Turkey (Doğu Akdeniz Kalkınma Ajansı, 2015).

4.6. Governmental Backing of Jewellery Product and Design Variety

Capturing the diversity of products and design is one of the greatest achievement that the industry has achieved in the background from past to present. Product differentiation is an important detail in terms of domestic and international expectations of the customers, which differ according to the requirements for different product and design variations that can be offered by the industry. Thus, this is considered as the sector's export success (Türk Ekonomi Bankası, 2010).

In this sense, despite from the financial backing of the government, Turkey Ministry of Economy and Turkey Ministry of Education are cooperatively supporting the jewellery industry and its advancements most crucially for developing qualified labour force at the point of raising educational support with developing more design departments to the industry. Table 4.1 shows the institutions and governmental actions taken on the Turkish gold market (Türkiye Cumhuriyeti Merkez Bankası, 2017, Hatipoğlu, 2005, Vural, 2003).

Table 4.1: Institutions and Governmental Actions Taken on the Turkish Gold Market

1983	Central Bank of Turkey was assigned by the government in order to have the permission to import gold bullion and determine gold prices
1989	Central Bank of Turkey established the official gold market in Turkey first time
1995	Istanbul Gold Exchange was established by the government in order to the privatization of the gold market in Turkey

2002	All the exchange markets in Turkey were merged under the authority of the Istanbul Gold Exchange
2002	Academical studies of jewellery first introduced in Mersin University with the supervision of Turkey Ministry of Economy
2003	Jewellery Exporters' Association was established by the decision of Turkey Council of Ministers in order to enlarge export-oriented activities in the industry
2004	Post-graduate studies of jewellery first introduced in Dokuz Eylül University with the supervision of Turkey Ministry of Economy
2011	Central Bank of Turkey enabled to afford 10% of required reserve ratio of foreign currencies in gold
2016	Central Bank of Turkey enabled to afford 5% of required reserve ratio of Turkish Lira in scrap gold
2017	The 44 th Istanbul Jewelry Show was held in March 2017 with more than 1250 manufacturer and exporter firms of gold jewellery

Based on: *Türkiye'de Altın Bankacılığının Gelişimi, Üniversitede İlk Kuyumculuk Eğitiminin Başlangıcı ve Gelişimi, Altın Piyasası ve Altın Fiyatlarını Etkileyen Faktörler* (Türkiye Cumhuriyeti Merkez Bankası, 2017, Hatipoğlu, 2005, Vural, 2003).

Eventually, under the leadership of Central Bank of Turkey, Turkey Ministry of Economy, Turkey Ministry of Education, governmental and non-governmental organizations, chambers and commodity exchange institutions and professional participants of the industry go hand in hand and collaborate intensively in accordance to the Turkish Jewellery Industry, which make progress with a stable and steadier development, has become one of the advanced countries in the global gold and jewellery market.

Turkey is among the top five countries in terms of gold jewellery production with an increasing annual gold processing capacity. Turkey's governmental and institutional unity and solidarity within the jewellery industry led the country becomes an important economic center of gold jewellery production thanks to its governmental and institutional ability to use its geographical advantages and developments.

Conclusion

This study, has aimed to understand the key role of gold for nations' economical course of events, which reflects to the efforts of countries vary from pioneer countries to the countries that are struggling to keep their place in the global setting and the Turkish jewellery industry., which is one of the top industries in the country with its traditional balances and increasing export figures in the light of developing Turkish economy.

As a result of the study, it was understood from the world gold production and demand figures, gold is the most used material as a raw material in the global jewellery industry. The Turkish jewellery industry is a vital example of this. According to that, it is considered that the Republic of Turkey has given considerable importance to keep its position among the top countries as being one of the top five jewellery markets in the world, together with India, China, the United States and Russia. Despite the current progress of gold production is considered as under capacity, approximately between 250 and 300 tonnes of gold jewellery is produced annually with approximately 250 thousand people of the workforce in Turkey. On the basis to that, it is determined that the Republic of Turkey has a great interest to reach a more outstanding position as aiming to be a global leader country in gold jewellery production globally as well as maximize its reputation among the world.

Although Turkey completed the liberalization period respectively late in the global market, after the removal of export barriers, Turkey began to show rapid progress in jewellery exports with the rise. Most recently, the examination of last 10 years of the export figures within the jewellery industry in Turkey shows us that there has been a significant increase of export value over the years by reaching US\$4.1 bn in 2014. On the basis of that, foreign trade of gold jewellery in Turkey has great results that placing the country in a crucial position among other jewellery producer countries in the world.

However, in the last decade, influencing factors affecting gold prices which can be baselined as political and monetary justifications has caused negative consequences in Turkey. Given the fact that when recent statistics and graphs are evaluated regarding the gold price changes and its consequences to the Turkish jewellery market, increasing political tensions and weaker performances of the local currency against global currencies has caused diminishing results in terms of domestic jewellery consumption because ongoing uncertainty

due to the political and economic atmosphere causes a weaker Turkish currency, so that weaker jewellery consumption among the society. Irrespectively, the Turkish government is focusing on every aspect of the jewellery industry to help and boost the production capacity and marketing by supporting the industrial activities of firms' global expansion in the global scale as well as making efforts to secure domestic jewellery market and households' jewellery consumption as a whole.

As a result, from past to present, gold has played a crucial role in the wealth of civilizations and their development. The most effective feature of the gold as being used as a saving tool and jewellery products lead the jewellery producing and consuming countries at a very important place of the world gold market. It is significant that the global balances of international jewellery trade remain in the same direction which also makes the historical approach of the gold important. So that, enhancing and evaluating the gold market and gold jewellery and jewellery ornaments industry requires an entirety with its economic, political, societal, traditional, and technological aspects which are the most important facts sustain countries at a steady position in the global scale.

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Titled Understanding Gold: How Dynamics of Gold Influence Jewellery Market in Turkey

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