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The impact of the increase in raw material prices on costs in the construction sector in the city of Osijek

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Abstract

The price increase of raw materials over the past few years has greatly affected the costs in construction. Construction as a business branch is defined as a technical, applied science, but also an economic branch that primarily deals with the technical and technological aspects of building construction. It will be shown to what extent the environment and foreign policy influence the price of materials in the construction sector. The price of the base material and raw materials will be compared over several years. Publications, magazines and books will be used to create this research. Primary and quantitative research will show the impact of price increases on costs, on a sample of 9 construction companies in the area of Eastern Slavonia and the city of Osijek. Environments, foreign political conditions and commercial threats will be analyzed in this research.
Keywords**:** *construction sector, prices of raw materials, costs in construction.*

1. Definition, types and formation of prices

By its definition, price is an expression of the value of some goods or services, expressed in the number of monetary units. Its formation is conditioned by the interaction of supply and demand on a certain market at a certain time. The price of raw materials and materials will be affected by supply and demand, but it should be noted that they will not react equally to changes. Such a phenomenon is called price elasticity, which shows exactly what price change can realistically be expected if supply or demand changes for a given quantity (Korošić, 1976, p. 19). The price represents the amount of money that the buyer on the market pays to the bidder for a unit product, which means that the price is a monetary statement of the value of the product (Meler, 2005, p. 231).

- with regard to the institution that decides on the price:
  - market price,
  - administrative price,
- considering the poles of the market:
  - offer price,
  - demand price,
- considering the relationship between supply and demand:
  - equilibrium price,
  - non-equilibrium price,
- with regard to domicile:
  - domestic price,
  - world price,
- considering the number of market entities and their power on the market:
  - competitive price,
  - duopoly - duopsony price,
  - oligopoly - oligopsony price,
  - monopoly - monopsony price.

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According to the method of formation, prices are divided into free and regulated. The free ones are based on an agreement between the buyer and the seller, and the government determines the regulated ones. Precisely regulated prices are the core of the problem because they can indicate the value according to which the purchase and sale must take place, and as maximum or minimum where the upper or lower limit of the price is mandatory. It is important to understand the influence of time and space on the market and prices (Korošić, 1976, p. 138).

Price Policy

"The effective functioning of the entire economic mechanism in our country is directly determined by the price system. On the other hand, the price system has a direct effect on decision-making related to prices, although as a rule, prices should, first of all, be the result of economic, and especially market laws" (Meler, 2005, p. 231). Pricing policy is one of the most important factors in the business of any organization. It is shaped according to the number of bidders and claimants, the full functioning of the market mechanism and competition, the disposable income of consumers, the type of goods offered on the market, the amount of transparency of claimants, and the instruments of the marketing mix. The pricing policy harmonizes the goals and attitudes used to achieve individual pricing decisions. There are four accepted rules for pricing; acceptability, increase in sales volume, profit assurance, competitiveness. Targeted harmonization of price policy is necessary at the macro level, in terms of achieving market and structural balance in the economy, and at the micro level, in the form of work organization, i.e. criteria and standards for price formation. Types of pricing policy are divided into general offer of lower prices (selling most items at lower prices), price recommendations, psychological pricing, special offer policies, gradation of price lines and rebate policy. The goals of the price policy, among others, are income generation, stability, improvement of the position on the market, and achievement of an equal price ratio between input and output. The most significant factors influencing price policy are costs, demand, competition, and instruments of socio-economic policy.

Market and price theory

The subject of market and price theory is the analysis of the determination of demand, supply and price, but also the detection of criteria under which a certain market is identified as an effective mechanism for regulating economic processes. This theory also serves to predict the consequences, for example, of the supply and demand model, and also when predicting the effects of commodity price policy, interest rates and the level of resource utilization. The use of market and price theory is particularly prevalent in entrepreneurship, in the formation of business decisions and performance analysis. It is used in forecasts of output volume, company expansion, costs, and similar analyses, and calculations important for the company's liquidity. The theory of prices can be seen from two different approaches. The first is analytical, which penetrates into the interior of the price, treats it as an objective economic quantity and evaluates the objectivity of the conditions under which the price was formed. On the other hand, the normative approach tries to answer the question of what the price should be to achieve a certain goal. The concept of fair price also emerged from the normative approach, „justum pretium". The value of fair prices is a relative term. In a planned economy, when price intervention is carried out, it usually manifests itself mostly in the prices of basic goods or materials, which most often results in a supply crisis and a reduction in the production of that good or service. Similarly, intervention in the money market encourages the development of inflation, thus increasing the interest rate, capital costs and the rate of economic unemployment. High prices depend only on the fact how many individuals are willing to buy or sell that good or service at the current price, if no one is willing to buy and sell, the price will be corrected until it reaches the optimal level. Therefore, the drivers and determinants of prices are the forces of supply and demand. On the other hand, in a situation of free competition, if there is a good with a certain high price, at the start you can count on a large number of producers of that good, some of whom will reduce the price in order to gain market share and thus bring it to an acceptable level. The price is also determined by the consumer's preferences, i.e. the fact that how much an individual values a certain good and under what circumstances.

Pricing strategies

Pricing strategies are defined as lines that must be adhered to when determining the price of goods or services. They are most often manifested when setting a lower, higher or equal market price, depending on the intention that the manufacturer intends to reflect. According to this standard, we distinguish three types of price strategies. The first is penetration, it implies prices lower than the market value, with the aim of stimulating the customer. This strategy is often used when launching new products. This is followed by an alignment strategy marked by prices similar to the competition, and the last strategy is a choice with a price higher than the market price and is reserved most often for the marketing of luxury products.

Company expenses

Costs are the value expression of investment of basic elements of production, which are created for the purpose of creating new effects and gaining profit, and costs include current investments of elements of production that arise in the business operations of economic entities, which are always expressed in money (Karić, 2005, p. 60). According to Karić (2005) costs have two components, first of all the quantity of consumable elements of production and the purchase price of consumable elements of production. According to Karić (2005, p. 61) elementary types of costs according to their origin are:

- material costs – costs of basic and auxiliary materials, energy, small inventory and the like
- costs of fixed assets - depreciation, technical maintenance and the like
- labor costs - compensation for invested human labor, i.e. wages or salaries

It is of great importance to control and manage costs in order to achieve the expected amount of products and services with as few costs as possible and, in the end, to achieve positive financial results.

Financing in companies

In the broadest sense, financing implies the activities of obtaining, using and spending financial resources in order to achieve business goals. As with price policy, financing can be seen from both micro and macro aspects. The macro aspect is oriented towards the achievement of social goals, for example current needs for defense, education, health, culture, while the micro aspect manifests itself and is linked to only one economic element or unit and its functioning in a certain time, which implies business in all emerging forms (Lacković, 2014, pp. 10-11). Financial decision-making and management, especially in risky and uncertain conditions, is focused on the allocation of capital within the company, the financial efficiency of the short-term and long-term use of capital, and ultimately the achievement of current and strategic goals. Business finance refers to the flow of money to economic entities and vice versa to the public sector, i.e. employees and back to the market. This area is certainly a significant factor in all economic developments because it includes markets, institutions, instruments and various financial processes (Medanić, 2005, pp. 3-9). The most important functions of business finance are the decision on investment, financing and dividends, because in addition to profit, the goal of every company is also the maximization of benefits, i.e. the wealth of shareholders.

Financial risk

In business activities, above all, risk refers to the existence of the possibility of monetary losses, that is, to the uncertain return of invested capital. Financial risk, therefore, can lead to increased expenses, reduced income, debts and reduced assets within the company (Bandić & Orešković, 2015, p. 143). In business, there are certain unexpected occurrences, which means that every business venture is exposed to a certain degree of risk. Empirically, we distinguish three types of business risks, namely pure, speculative and fundamental risk. Pure risk implies a certain possibility of loss, speculative risk refers to unforeseen circumstances that may result in loss, and fundamental risk refers to a certain disruption in economic or political relations that causes loss. (Lacković, 2014, p. 13).

2. The impact of price increases on company costs

Inflation

The fact is that in today's circumstances, the procurement of basic raw materials and materials for work is hampered by the reduced amount of availability and their constantly rising prices. Not so long ago, the whole of Europe, including our country, was caught off guard by hyperinflation, the consequences of which are felt on the economic and economic level to this day. Monthly interest rates reached a record 30%, GDP grew by 5%, wages were exchanged into foreign currency upon receipt, and prices varied significantly. Under these circumstances, business planning was unfeasible. The control of the level of inflation can be achieved to a certain extent through the influence of monetary policy, and thus a low level of inflation (up to 2%) is considered suitable for the economic system. In the simplest terms, inflation is the increased price of the value of the consumer basket, and given consumer preferences, the baskets differ, and so does the impact of inflation on individuals. (Korošić, 1976, p. 62). The HIPC or Harmonized Index of Consumer Prices is a widely accepted measure of price change. The value of the consumer basket projects a ratio that should be aligned with an individual's consumption. Precisely because of this, a significant role is played by the increase in the prices of, for example, energy products.

Changes in prices and cost structures in the company's work

The break-even point defines the amount of output that can cover costs. Breakeven analysis is a process carried out with the aim of determining the total revenue and cost at a certain level of output. If we paraphrase output into sales volume, zero amount of output or sales volume will mean a negative profit or loss at the same level as the fixed costs that the company covers. The goal of every company is to minimize losses and operate with a profit, and in this case, it happens at the point where the total income equals the total cost. This is exactly the point of coverage mentioned above. The total revenue function depends on the price of the product or service, and the total cost function on the price of the variable input and the fixed cost. In conclusion, as soon as there is a change in the price of the product or the amount of the fixed cost, the coverage point changes as well (Katavić, 2009, p. 65). The market price may fall or rise in relation to the existing price. Economically speaking, the market price determines the slope of the total sales curve, so an increase in price increases that slope and vice versa at every level where output is greater than zero in relation to the total revenue curve. Any shift of the total revenue curve to the left implies an increase in total revenue, which means that any increase in sales above the break-even point, if the total cost does not change, implies an increased profit of the company. Also, any increase in sales below the breakeven point reduces the loss. From this arises the paradigm that when the price rises, the profit grows faster than the growth of output or sales volume. The break-even point can also be shifted by a change in the price of the variable input, also due to a change in the height, i.e. the slope of the total variable cost and the total cost curve. An increase in the slope of the mentioned curves implies a shift to the left at all levels of output that are greater than zero with respect to the position before the price increase. From which comes the theory that an increase in the price of a variable production factor or input reduces the final profit of the company. If there are changes in the amount of fixed costs, this will result in a correction of the total costs. Any increase in fixed costs will lead to an increase in total cost for all output levels, so the origin of the total cost curve will rise exactly by the amount of that increase in total fixed cost, while the total cost curve is parallel to the total point curve before any price change. If there is an increase in the fixed cost, it will be reflected in the increase in the amount of output needed to cover the costs (Katavić, 2009, p. 62). Unlike a change in product price and variable inputs, a change in fixed cost does not affect the rate of change in profit and loss relative to sales volume. There is another assumption that can change the break-even point, i.e. profit, and it is about substitution or replacement of the production input. Such a replacement can lead to a decrease in fixed and an increase in variable costs, or vice versa. It is usual that the substitution of variable inputs with fixed ones brings the breakeven point to a higher level or vice versa, the substitution of fixed with variable inputs lowers the breakeven point. The product of input substitution can result in an increase in total fixed cost and a decrease in variable inputs, or vice versa. Input substitution can also keep the break-even point at the same level of output, then the total cost and revenue curves intersect where we can conclude that the same amount of output or sales volume is needed to cover all costs even after replacing the input. This kind of example is ideal for analyzing changes in profit and the amount of output in the company's work. The sensitivity of profit to changes in output indicates the structure of business leverage. It shows exactly the percentage change in profit if there is a change in output. At the coverage point, the power of business leverage is infinite, and the change, i.e. fall or rise, occurs at different levels of output. In conclusion, with an increase in sales volume, the power of business leverage decreases and vice versa.

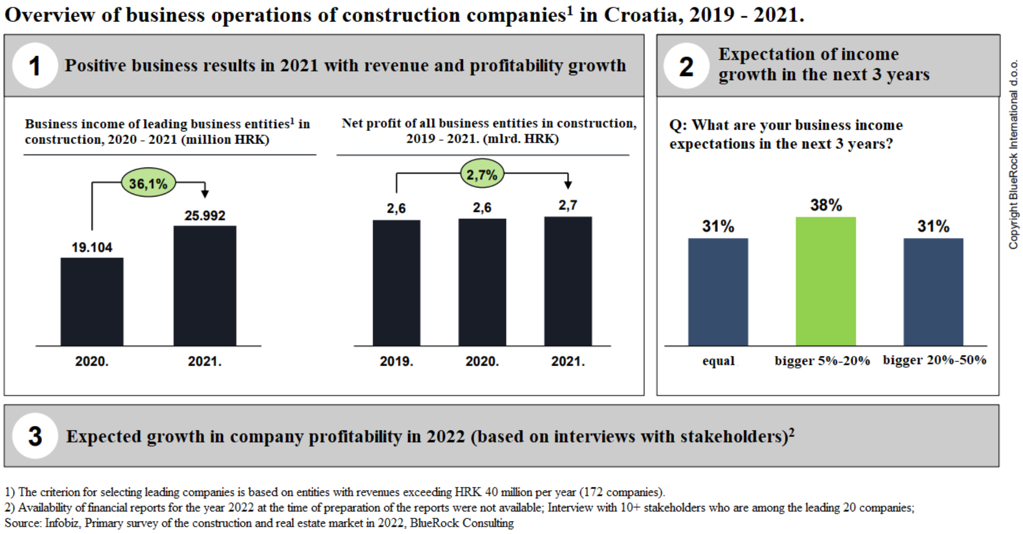
The effect of price increases on company costs

The most important factor affecting the change in the cost of fixed assets is the movement of prices in the market. In cases of significant price changes, a revaluation of fixed assets is carried out, i.e. a revaluation of the value of fixed assets. The determined revalued value is the monetary value of fixed assets. Its purpose is to harmonize the value of long-term assets with market prices in order to realistically show their value. Basic resources are of great value, so it is necessary to monitor the intensity of their use. Fixed costs in the company arise independently of the use of fixed assets, and the goal of business is certainly the maximum utilization of basic assets so that the fixed costs per unit of a product or some service remain as low as possible and thus more acceptable. Increasing the business result is feasible by increasing output and sales volumes or by digressing fixed costs. The success of the company in the form of a good business result and a large total income depends on the optimization of all components of the company and the maximum utilization of capacity. How much costs depend on prices is also shown by the basic hypothesis of cost theory, which includes the price of materials, as well as quality and rational consumption as factors that affect the level of costs in the company's operations. Furthermore, the price of the material certainly depends on the available suppliers, the amount of procurement, on direct procurement or on procurement through an intermediary (Katavić, 2009, p. 65). Also, the price of the material depends on the transport and the cost price of the same. By rationalizing the consumption of materials and careful manipulation, savings on materials are guaranteed.

3. Construction sector in the Republic of Croatia

Construction as a business branch is defined as a technical, applied science, but also an economic branch that primarily deals with the technical and technological aspects of building construction. Secondary activities, but closely related to construction, include research, design, construction and production of building materials. On the territory of Croatia, with today's borders, we find various layers of historical civilizations and buildings, the formation and disappearance of which are unquestionably linked to the migration and factions of different civilizations (Bandić & Orešković, 2015, p. 53). Today, Croatian construction encompasses various sectors such as residential construction, commercial construction, industrial construction, infrastructure projects, tourist facilities and renovation of existing buildings. Over the past years, Croatia has witnessed large infrastructure projects such as the construction of highways, bridges, tunnels, ports and airports. These projects have improved transport connections in the country and stimulated economic development. Also, the construction of tourist facilities such as hotels, apartments and marinas play an important role in the Croatian economy, given the great importance of tourism in the country. Croatian construction industry also faces challenges such as harmonization with European standards, sustainability, energy efficiency and environmental protection. Increasing emphasis is placed on the application of modern technologies, innovations and environmentally friendly practices in the construction sector. According to estimates, in the European Union, the construction sector generates 20 million jobs, thereby increasing the level of assets of the country whose infrastructure is being discussed. All these factors imply that the development of the construction sector is directly related to the long-term growth and final profit of the observed area. (Radujković, 2015, p. 17).

Figure 1. Overview of the business of construction companies in Croatia, from 2019 to 2021



Source: BlueRock Consulting Title (2023, January).

Crisis in the construction sector 2009-2016.

The recession left a strong impact on the construction sector, which is felt to some extent to this day. Before the start of the aforementioned crisis, Croatia, along with Ireland, Spain and Cyprus, recorded an increase in construction works in the form of transport infrastructure, the construction of highways, but also of apartments. The reduction of investment activities and wrong development policies led to a kind of collapse. An important role was played by the expansion of mortgage loans, which increased at the same pace as real estate prices. In addition, foreign financing in which the executive authorities sought solutions resulted in long-term debts, both of companies and individuals, as well as of all government sectors. All this resulted in a final decline in construction activity in most European countries. Europe experienced the bottom of the recession in 2013, and contractions in the construction sector began to be felt as early as 2009. Precisely because of the wrong choice of development policies and the emphasis on foreign investments, the recovery of the construction sector after the crisis was difficult and slow, and this is primarily due to the volume of public debt that was subjected to the implementation of fiscal consolidation and thus resulted in a shortage of jobs for builders on infrastructure projects. In addition, due to the large concentration of open jobs on the domestic market, the interest in foreign projects and construction operations abroad weakened, thus creating a problem when conquering new markets. Statistically, more than 53,000 jobs were lost in the construction industry from 2009 to 2016, and its share in GDP decreased to 5.1%. The reduction of construction works by 46.6% is also devastating, and the value of completed projects fell by 49.3%. Also, the number of requested and issued building permits decreased by 46.3%. In this way, the competitiveness of the Croatian construction industry was halved, partly due to the loss of jobs, partly due to the loss of references on foreign markets. Despite various effective economic policy measures implemented in numerous European countries, Croatia did not take the necessary steps and implement them in order to reduce and slow down the decline in construction activities. Only in the middle of 2013, construction companies underwent general measures to improve regulations for the field of construction, which further enabled the faster execution approval procedures of construction permits. This was also the initial step in the assumptions of future investment activities. The funds from the European Union funds did not visibly affect developments in the construction sector, and the measures for the implementation of pre-bankruptcy settlements enabled individual companies to survive on the market.

Profitability, trends and movements of the construction sector in Croatia

According to the latest statistics, in 2019 there were 15,183 registered construction companies in Croatia with around 93,500 employees. The COVID-19 pandemic briefly shook the construction industry due to restricted population movement, shortages of building materials and rising costs. The procedure is simple, if building materials are available, shipping costs are high and delivery times are long. In order to prevent the collapse of the construction industry, the Government of the Republic of Croatia adopted a conclusion on measures to mitigate the consequences of fluctuations in the prices of construction materials and products. Although another collapse of the economy was expected, there was still a great expansion. In 2020, 5,717 building permits were issued, and in the same period of 2021, 6,762. Most building permits refer to new construction (i.e. apartments). In 2021, 16,654 apartments are planned, which is an increase of 18.3% compared to 2020. According to the latest statistics, the amount of construction work in February 2022 will be higher by 5.2% compared to February 2021, and in May 2022 it will be higher by 4.5% compared to May 2021. A large amount of investment and all a greater number of projects cause further growth in real estate prices, which in the long run can become fatal for the real estate market. Apartment prices rose 13.5% in the first quarter of 2022 compared to the same period in 2021. New construction prices are rising even more! As a result, new home prices in 2022 will increase by 9.2% compared to the fourth quarter of 2021 and by 20.3% compared to the first quarter of 2021. The problem with rising home prices is that it can cause a decline or even and the final market crash. The real estate market always follows the economic and economic situation of the observed area. If the situation is stable, real estate prices will rise due to demand and vice versa. Historically low interest rates on loans are an important reason for the sharp rise in prices of residential space per square meter. After the COVID-19 pandemic, the demand for real estate has grown enormously, as housing is considered one of the safest investments. Properties rarely fall in value, and it is possible to earn attractive returns from selling (where the market value rises) or renting. As investing in real estate has its benefits, on the other hand, it is important to look at the disadvantages as well. The main disadvantages of investing in real estate are low liquidity, high transaction costs, non-passive income, damage during the lease, dilapidation, additional financial investments. After Croatia's entry into the Schengen area, the demand for real estate recorded an even greater increase. The Schengen area facilitates and speeds up transport and increases the number of trips. This will enable direct foreign investments, mainly in Istria and Kvarner. Whether the real estate market will experience a downturn in the next year or two is difficult to predict. By entering the Schengen area and the Eurozone, a large market has been opened for foreign buyers, which certainly leads to a higher percentage of the purchase and construction of apartments and houses. Since the real estate market is closely related to the state of the economy, stagnation or a fall in prices and investments is possible. It is important to note that there is always work to be done in the construction sector. Whether it is buildings, houses or transport infrastructure, investments will certainly continue. From the past, it can be seen that a significant drop in the value of real estate and investments is possible, but when the recovery begins, these values rise rapidly.

The impact of the emergence of the COVID 19 pandemic on the rise in prices of construction materials

The COVID-19 pandemic had a significant impact on the construction sector and the prices of building materials. In particular, disruptions in supply chains have led to disruptions in global supply chains, with production, transportation and distribution of construction materials suspended. Lack of material availability and increased demand caused prices to rise. Then, the increased demand for home repairs and renovations, where the vast majority of the population decided to invest in improving their homes due to lockdown measures and working from home. Increased demand for building materials for home repairs and renovations also contributed to rising prices. Increased production costs which may include increased costs of raw materials, transportation, labor and adherence to safety protocols. Inflation, which along with the pandemic implies inflationary pressures on the global economy. It is important to note that the prices of building materials may vary depending on the region and type of material. Construction during the COVID-19 pandemic has presented a number of challenges for the construction sector, but certain measures have been taken to ensure the safety of workers and the continuation of construction projects. Safety measures and protocols were enacted where construction companies had to adapt working conditions and implement strict safety protocols to reduce the risk of the spread of COVID-19. This may include measures such as social distancing, wearing masks, regular hand washing, disinfection of work surfaces and tools, and organizing shifts to reduce the number of people on the construction site. In addition, there has been an increase in digitization, in terms of reducing physical interactions and promoting remote collaboration, the use of digital tools and technologies has increased. In particular, virtual meetings, the use of project management software and the use of technologies such as BIM (Building Information Modeling) they have become even more important for effective project management.

In some regions and sectors, the pandemic has led to restrictions on labor migration. Travel and relocation were difficult, which could affect the availability of labor and the execution of works. COVID 19 also prompted changes in the planning and design of construction projects. Concepts such as better ventilation, spaces for social distancing and sanitary facilities have become priorities in the design of facilities.

The impact of the war in Ukraine on the construction sector

The war in Ukraine has a significant impact on the construction sector in the country, but also throughout Europe. Conflicts in Ukraine have resulted in damage to infrastructure, including roads, bridges, buildings and power grids. Destruction and damage to infrastructure make it difficult or impossible to carry out construction projects normally. The state of war and conflicts create security risks on construction sites. Unpredictable situations and instability can threaten the safety of workers, as well as work on open construction sites. War can also lead to disruptions in the supply of building materials, equipment and other resources needed for construction. Lack of resources and price increases certainly have a negative impact on the performance of construction projects. The state of war and conflicts lead to a decline in economic activity in the country. This can result in reduced investment in the construction sector, difficult access to financing and reduced demand for construction projects. One of the main accompanying phenomena is the mass migration of the population, including the workforce. The departure of skilled workers from the construction sector can cause labor shortages and a decrease in expertise in the industry. All this consequently leads to changes in priorities in the construction sector, that is, instead of new construction projects, the priority will become the restoration of damaged infrastructure and the construction of facilities that are necessary for the recovery of regions affected by the conflict.

The influence of foreign policy on the rise in prices of construction materials

Foreign policy can have an impact on the rise in prices of construction materials in several ways. The introduction of customs duties on the import of construction materials or the application of other trade restrictions may result in an increase in prices. Customs barriers make it difficult to import certain materials and increase import costs, which can be passed on to consumers in the form of higher prices for construction materials. Fluctuations in exchange rates and changes in currency policy also affect the increase in prices of base materials. If the value of the domestic currency decreases relative to the currencies of the countries from which the materials are imported, this may result in an increase in prices. Instability or tensions at the global level can disrupt the construction material supply chain. If a particular region is facing political instability, sanctions or conflict, this can lead to supply disruptions or material price increases. Negotiations on trade agreements and changes in international trade policy can have an impact on the prices of construction materials. Depending on the terms of the agreement and trade policies, the prices of the materials vary. The introduction of embargoes or other restrictions on certain countries or producers can lead to reduced availability of construction materials or increased prices due to reduced competition in the market. It is important to note that foreign policy can have a complex and changing influence on the prices of construction materials. Various political decisions and events can affect global and regional market conditions. Therefore, monitoring relevant political events and changes in foreign policy can be useful for predicting and understanding the impact on the prices of construction materials. In addition to foreign policy, the economic and economic situation in Europe can have a significant impact on the construction sector. Economic growth and stability encourage increased investment in infrastructure projects such as roads, bridges, railways, energy infrastructure and other public facilities. A positive economic situation can result in more budget funds for infrastructure projects, which encourages activity in the construction sector. Economic growth stimulates the growth of demand for residential and commercial space. The increase in the number of new construction projects for residential and commercial buildings results in activity in the construction sector. Favorable housing market conditions, such as low interest rates or incentives to buy, can also stimulate demand and construction. Economic conditions and stability can affect the availability of financing for construction projects. When banks and financial institutions are ready to provide loans on favorable terms, construction companies have a greater possibility of financing projects and launching new initiatives. Economic growth can result in greater demand for labor in the construction sector. This can lead to rising wages and difficulties in finding skilled labor. Also, high unemployment or economic recession can affect the reduction of activity in the construction sector. The economic situation ultimately affects the prices of construction materials. If there are inflationary pressures or supply chain disruptions, material prices may increase, affecting the overall cost of construction projects (Katavić, 2009, p. 73).

The impact of the increase in the prices of basic materials on the costs of construction materials

A price increase can have different effects on a company's costs, depending on different factors. The first impact is on purchasing costs, in the form of an increase in the prices of raw materials or materials that the company purchases, which directly affects its costs. If the prices of raw materials increase, the company will have to pay more for its materials and raw materials, which may result in an increase in total costs. Then there are the costs of production, if the increase in prices affects the costs of production, the company may face increased costs of labor, energy, equipment or other resources needed to produce goods or services. This may result in a decrease in the company's profitability or the need to increase the prices of its products or services to compensate for the increased costs. A third impact relates to transportation costs, if fuel prices or transportation costs rise, businesses that depend on transportation to distribute their products may face higher costs. This can have an impact on the overall costs of the company and may require adjustments in logistics planning or changes in the prices of products or services. As for labor costs, rising prices lead to higher labor costs, so companies will have to pay higher wages to their employees. This can be reflected in the overall costs of the company, especially if salaries are a large share of the total costs. In terms of demand for products or services, consumers respond to price increases by reducing demand, which means that a business may face reduced sales and revenue. This can affect the financial condition of the company and its ability to bear higher costs. It is important to note that the effects of price increases on company costs are complex and depend on specific market conditions, industry and competition. Each company will feel the effects of price increases in a different way and must carefully assess how this will affect its costs and profitability. The relationship between a company's prices and costs can be complex and depends on various factors. Aspects that explain this relationship refer to:

- Production costs, including procurement costs of raw materials, labor, energy and other resources, as they tend to affect the prices of products or services that the company offers on the market. If costs increase, the company may have to raise prices to maintain its profitability. On the other hand, cost reduction can allow a company to lower prices to be more competitive in the market.
- Prices directly affect company revenues. If a company raises the prices of its products or services, it could generate higher revenues per sale, assuming that demand remains stable. On the other hand, a price cut may attract more customers or encourage more spending, which could result in higher revenues but lower margins.
- Prices play an important role in shaping the demand for a company's products or services. When a firm raises prices, demand usually decreases, while lowering prices can lead to increased demand. Therefore, when a company makes pricing decisions, it must consider how it will affect demand and how much it will affect its costs.

- Market competition can also affect the relationship between prices and costs. If a business operates in a highly competitive environment, it may be limited in its ability to raise prices to offset increased costs. In such cases, a business may need to find ways to cut costs in order to remain competitive.

It is important to note that the relationship between prices and costs is not always unambiguous and may differ depending on specific market conditions, industry, competition and other factors.

4. Comparison of construction material prices (2015-2022)

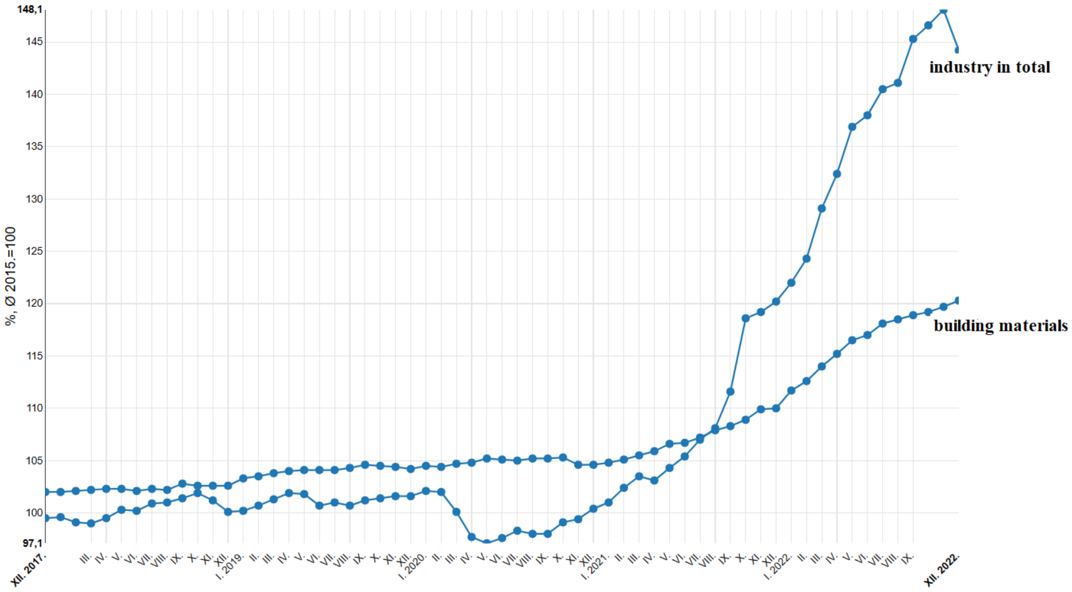
Recently, many countries are witnessing an increase in the prices of construction materials. Various factors affect this increase, some of them are:

- Growth in demand: Increased demand for construction materials, especially in sectors such as residential construction, infrastructure and renovation, can lead to a rise in prices. The increase in demand may be the result of economic growth, urbanization or governments initiating infrastructure projects.
- Increased costs of raw materials: The prices of raw materials such as steel, concrete, wood, copper and petroleum products, which are used in the construction industry, can vary and affect the final prices of materials. Fluctuations in the world market, natural disasters or political factors can affect the availability and prices of raw materials.
- Transportation costs: Increases in transportation costs, including fuel and logistics, can also affect the final prices of construction materials. If transportation costs increase, this may result in higher material prices to cover these additional costs.
- Inflation and exchange rate: Inflation and exchange rate fluctuations can affect the prices of construction materials. If there is inflation in the economy or the value of the currency decreases relative to other currencies, this can lead to an increase in material prices.

Producer prices of construction materials on the domestic market in March 2023 are 0.6 percent higher than the previous month. Compared to March 2022, they are 9% higher. If we compare the producer prices of construction materials on the domestic market in March 2023, compared to the average in 2015, they are 24.2% higher. New data from the CBS: Prices of construction materials in March increased by 9% compared to last year (Croatian Bureau of Statistics, 2023).

The producer price index of construction materials on the domestic market is calculated on the basis of a special list of clearly defined products and items: representatives of construction materials within selected industrial products and items, collecting the prices of producers of industrial products on the domestic market.

Figure 2. Producer price indices of building materials on the domestic market from December 2017 to December 2022.



Izvor: Croatian Bureau of Statistics (2023).

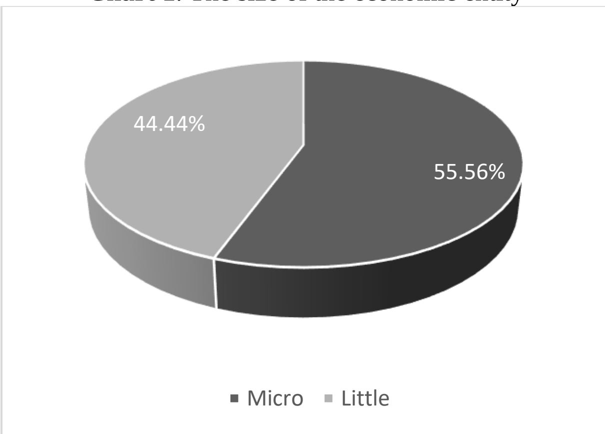
The index of producer prices of construction materials on the domestic market measures changes in the level of producer prices of construction materials produced and sold on the domestic market (Croatia). The index is an important short-term indicator of the business cycle, which shows the monthly dynamics of changes in producer prices of construction materials on the domestic market. According to the EU concept, this indicator can show inflationary tendencies before they reach consumers. It is calculated on the basis of a special list of clearly defined products and items: representatives of building materials as part of selected industrial products and items for charging prices for branch manufacturers on the domestic market. The index of production prices of construction materials has increased slightly since the beginning of 2017, but the growth has accelerated since the spring of last year. This was preceded by a relatively stable period of construction material prices from the spring of 2013 to the end of 2016, with a slight drop in 2015. The largest increase in the prices of construction materials in this century was recorded in the first half of 2008: it was 25 percent compared to the base year of 2005. According to the available statistical data, in 1993 the CBS recorded the highest annual increase in the prices of construction materials during the war. The State Bureau of Statistics announced that in February 2023, production prices of construction materials on the domestic market will increase by 0.5 percent compared to January 2023, that is, by 9.8 percent compared to February last year. If the latest data are compared with the average of 2015, the price of construction materials in February 2023 was 23.5 percent higher than in 2015. Specifically speaking, if we compare the price of iron between 2015 and today, we are talking about a price increase of 100%, cement and concrete about 50%, and brick a record 300%. The current war in Ukraine, with the disruption of energy supply chains, also led to an increase in the prices of construction materials. What is also worrying in the situation of extreme price jumps are the agreed investments financed from EU funds. The European Union (EU) provides financial support for construction through various programs and funds. These funds aim to stimulate economic development, regional balance, sustainability and innovation in the construction sector. The key EU funds that can provide financial support for construction are:

- Cohesion Fund: The EU Cohesion Fund is intended to support economically less developed regions and finance infrastructure projects. The fund is used for the construction of roads, railways, energy networks, water supply, wastewater treatment and other infrastructure.
- European Regional Development Fund (ERDF): ERDF is a fund that supports investments in regional development, urban projects, renovation and regeneration of urban areas, as well as improvement of energy efficiency and sustainable construction.
- Investment Fund for Strategic Investments (EFSI): EFSI, also known as the Juncker Plan, is designed to encourage private and public investment in the EU. The fund supports projects in various sectors, including infrastructure and construction projects.
- Programs for research and innovation: the EU has various programs and initiatives for research and innovation in the construction sector, such as Horizon Europe and programs for energy efficiency.
- Rural development funds: For rural areas, the EU offers various funds, such as the European Agricultural Fund for Rural Development (EAFRD), which is used to support rural development, including rural infrastructure and building renovation.

5. Research results

Research was conducted in Eastern Slavonia and the city of Osijek on a sample of 9 economic entities from the field of construction. The research was conducted with a questionnaire consisting of 5 questions.

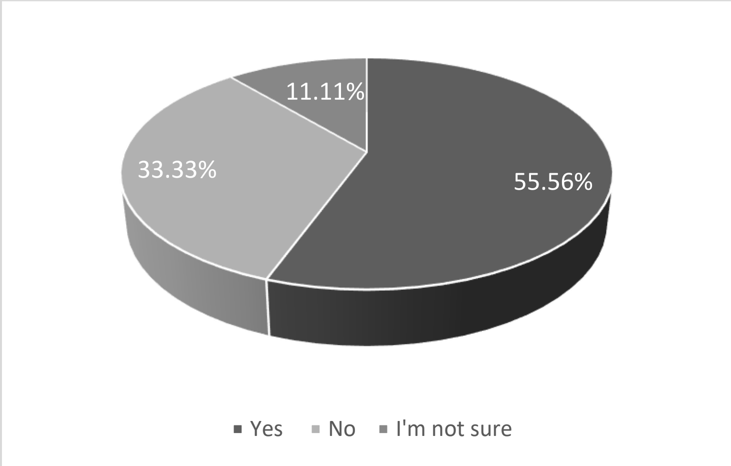
Chart 1. The size of the economic entity



Source: Author's work

From the results of the research, it is evident that 55.56 percent of the respondents or 5 are small economic entities, while 44.44% or 4 of them are in the group of micro economic entities.

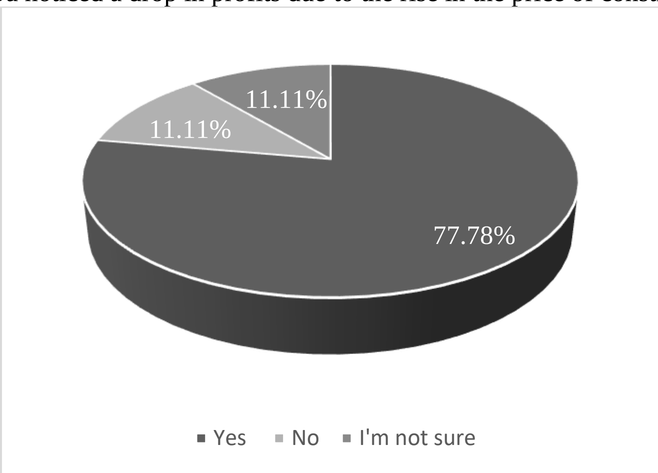
Chart 2. Has the increase in the price of construction materials affected the changes in costs in your company's operations?



Source: Author's work

The majority of respondents, 55.56% or 5, believe that the increase in the price of construction materials affected the change in the operating costs of their company. Three respondents or 33.33% of them believe that the increase in the price of construction materials did not affect the change in the operating costs of their company.

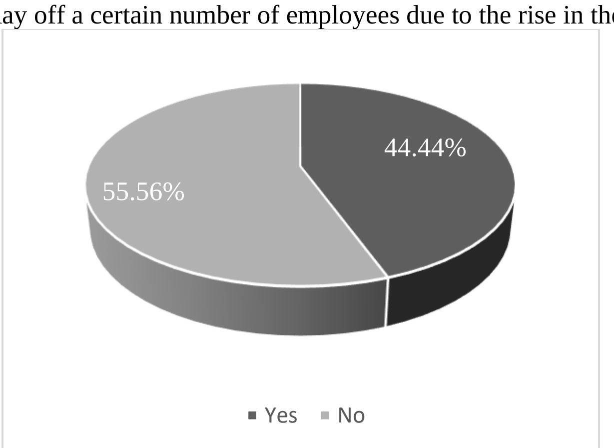
Chart 3. Have you noticed a drop in profits due to the rise in the price of construction materials?



Source: Author's work

Three-quarters of the respondents noted a decrease in profits due to the increase in the price of construction raw materials. While one respondent did not record a drop, or he did not know if the drop in profit was caused by the increase in the price of construction materials.

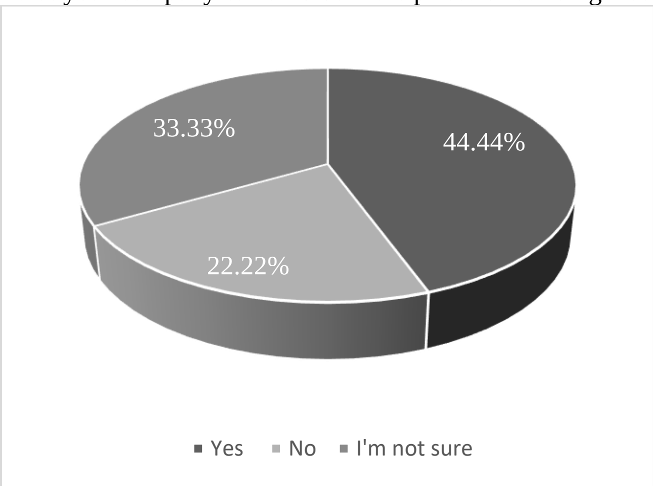
Chart 4. Were you forced to lay off a certain number of employees due to the rise in the price of building materials?



Source: Author's work

The majority of respondents were not forced to fire employees due to the increase in the price of construction materials, while 44.44% of them were unfortunately forced to fire employees due to the increase in the price of construction materials.

Chart 5. Do you think that your company can survive if the prices of building materials continue to rise?



Source: Author's work

If the prices of building materials continue to rise, 44.44% or 4 respondents believe that they will still be able to survive on the market. If prices continue to rise, 33.33% of respondents are not sure whether they will survive on the market, while 22.22% of respondents are certain that they will not survive on the market.

6. Conclusion

Considering the current events in Europe and the world, including the consequences of the global coronavirus pandemic and the war in Ukraine, the continuation of inflation and worsening of the situation on the global market is likely. The prices of energy, raw materials and transportation at the global level have increased, which has resulted in a chain price increase of almost all products and services. The increase in energy prices is the result of a number of factors, including increased demand, reduced gas production, slow negotiations over the Nord Stream and the economic dependence of certain regions on gas and other energy imports. This increase in energy prices, as well as all other products on the market, did not bypass the construction sector in Croatia either. In our country, a strong increase in the prices of construction materials and services in the construction-crafts sector has been felt since 2021. This growth was contributed by the chronic lack of skilled labor and the increased demand due to the reconstruction of damaged buildings after the earthquakes that hit the city of Zagreb and Banovina in 2020. The prices of construction materials have increased significantly since the beginning of 2021. Most materials rose in price by ten percent, while some even doubled or more than tripled their prices. Strategic management is of great importance both during the establishment of a company and during the entire operation. Every company should have a clear vision and goal and developed strategies that will guide it towards these goals. Managing strategies requires good organization within the company. The success of a company largely depends on various internal and external factors that have different influences on it. External factors are often beyond our control and therefore pose a greater threat to the company itself. The importance of strategic management comes to the fore especially in crisis situations. Crisis situations caused by external influences, such as enormous increases in raw material prices, are often unpredictable, come suddenly, and are characterized by great uncertainty regarding the duration and consequences they may cause. Applying cost estimation methods, inventory management strategies, strategic forecasting and planning even in challenging economic and economic times are a recipe for success in the construction sector.

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