

# Economic Determinants of Obesity: Examining the Impact of Food Price Variations on Dietary Behavior in the United States

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### Abstract:

This paper examines the correlation between food prices and obesity in the United States. The primary inquiry examines the impact of fluctuations in food prices on individuals' dietary behaviors and body mass. The research examines how economic variables and dietary regulations affect obesity, utilizing data from the World Health Organization, the Centers for Disease Control and Prevention, and studies conducted by Han, Powell, and others. This research report builds on various scholarly articles and data to establish the argument that the presence of obesity has various contributing factors related to food prices and policies and affects the health of people. The results indicate that when unhealthy, high-calorie foods are less expensive than nutritious options, individuals—particularly those with lower incomes—are more inclined to select them. This results in elevated obesity rates and associated health issues, including cardiovascular disease and diabetes. The research indicates that subsidizing healthy foods and imposing charges on sugary or fast foods may contribute to the reduction of obesity rates. Modifying food costs and enhancing availability to nutritional options may promote improved dietary habits and healthier lifestyles.

**Keywords:** Food prices; obesity; economic factors; nutrition policy; public health.

## 1. Introduction

The intense increase in the global economy has contributed to various multidisciplinary efforts that showcase its drivers. Major contributing factors like

fat intake, consuming sugar-rich foods, snacks, soft drinks, and fast food have been found to be associated with higher weight gain [1]. These unhealthy food habits and intake of unhealthy food give rise to obesity in people. According to the National Heart,

Lung, and Blood Institute, overweight and obesity, which are characterized by an increase in the size and quantity of fat cells in the body, are prevalent conditions in the United States. In addition to genetics and family history, other factors that contribute to overweight and obesity include certain medications, eating habits, sleep deprivation and physical inactivity. Hence, to analyze these points, it can be stated that obesity is a chronic illness that increases the risk of heart disease, which is the country’s leading cause of death.

It is also associated with several other health issues, such as type 2 diabetes and cancer. In accordance with the National Heart, Lung, and Blood Institute data, nearly three in four adults who are of aged 20 and above in the United States have either obesity or overweight [2]. These suggest the fact that obesity is one of the most common factors that contribute to mental and physical illness of the people in the country. Considering the contributing factors of obesity and overweight, it is mainly the food consumed by these people. This includes economic factors, which suggests that the pricing of these foods will have a considerable effect on their consumption of these foods. This indicates the argument that food prices have a direct link to the increase or decrease in consumption of these foods. This can be said as the monetary cost of foods, such as food subsidies and taxes, acts as potential policy instruments that affect the obesity rate. Thus, this research report will evaluate the extent to which various food prices are directly associated with the prevalence of obesity in the United States.

The conceptual background for this issue is primarily associated with factors like body mass index (BMI), common health consequences, deaths, and even the burden of malnutrition. According to the World Health Organization, the complex disease that is a result of excessive fat deposits and negatively affects the body is defined to be obesity. This can be analyzed as the cause of diseases like type 2 diabetes and also heart disease. Through this, it can be stated that this complex disease directly influences the living conditions and the quality of the people who suffer from obesity. The first factor that is directly connected to obesity is the body mass index of an individual. The formula by which obesity is diagnosed is by measuring the height, weight, and the body mass index of an individual, which is weight (kg) divided by height<sup>2</sup> (m<sup>2</sup>) [3]. In other words, and in simpler terms, the body mass index is a representative marker to measure the additional measurements and fatness. This includes the waist circumference and other factors that help in the process of diagnosing obesity.

The body mass index of an individual varies from person to person depending upon gender and age in adolescents, children and infants. To understand the obesity class, depending on the body mass index and the risks towards health associated with it can be understood in Table 1. Therefore, it can be analyzed that the measurement of body mass index is one of the major parameters that can diagnose the prevalence of obesity and acts as a factor for understanding the contextual background of this issue.

**Table 1. Classification of Overweight and Obesity**

MI (kg/m <sup>2</sup> )	Obesity Class	Men ≤ 40 in (≤ 102 cm) Women ≤ 35 in (≤ 88 cm)	Men > 40 in (> 102 cm) Women > 35 in (> 88 cm)	Disease Risk	MI (kg/m <sup>2</sup> )
< 18.5	Underweight	–	–	–	< 18.5
18.5 – 24.9	Normal	–	–	–	18.5 – 24.9
25.0 – 29.9	Overweight	Increased	High	Elevated risk compared with normal BMI	25.0 – 29.9
30.0 – 34.9	Obesity Class I	High	Very High	Significantly increased risk	30.0 – 34.9
35.0 – 39.9	Obesity Class II	Very High	Very High	Substantially increased risk	35.0 – 39.9
≥ 40	Obesity Class III (Extreme Obesity)	Extremely High	Extremely High	Severe health risk	≥ 40

One of the major factors that should be associated with understanding the conceptual background of the issue is the role of genetic predisposition to weight gain and all the other environmental influences. According to Purnell, gene discovery has identified several major monogenic defects resulting in hyperphagia accompanied by severe and early-onset obesity [4]. Hence, examination of the gene of a person can also identify the possibilities of obesity

in a person. On the other hand, the conceptual background for this issue is also associated with environmental influential factors like calories, diet quality and prices of the food. Hence, examination of the gene of a person can also identify the possibilities of obesity in a person. On the other hand, the conceptual background for this issue is also associated with environmental influential factors like calories, diet quality and prices of the food. There

are numerous studies present in the past that highlight the fact that higher vegetable and fruit prices are associated with higher weight outcomes. Alongside this, factors like policies on food prices, such as taxes on fast food, soft drinks, or subsidies for organic vegetables and fruits, have the potential to contribute to the effect in policy tools. Analyzing these arguments, it can be said that, first, the food pricing has several contributing factors, and second, combining all contributing factors, the food pricing hence affects the presence of obesity. Additionally, according to Powell and Chaloupka (229), altering the cost of unhealthy foods, which are energy-dense compared to less-dense and healthy foods, has the potential to change the food consumption pattern. In simpler terms, if highly processed foods and energy-dense foods are comparatively lower-cost than the highly nutritious foods, there is a possibility that the consumption of these low-nutrition foods will be more. This will automatically result in obesity and other health issues. To add to this, it is proven that Americans consume too much unhealthy food, and as a result, the intake of micronutrients does not complement proper dietary recommendations [5]. Therefore, overall, through this, a few analyses can be made. First, consumers consider prices while making their dietary choices. Secondly, as previously mentioned, highly nutritious foods are more expensive than the highly energy-dense foods and subsidies for organic fruits and vegetables. Finally, the food which are low in price and unhealthy is often the alternative for people with low income. Therefore, as people with lower incomes adopt unhealthy food, it automatically results in the prevalence and increase in obesity.

## 2. Obesity, Lifestyle and Health

In recent years, people have seen a tremendous emergence of a global cost of living crisis that was driven by the increase in the prices of food and energy. As a result, this has created a financial crisis for a growing number of families. According to Robinson, the emergence of this cost-of-living crisis has showcased a concerning number of people suffering from food insecurity, and this acts as a risk factor for obesity and other health problems [6]. This suggests that the lifestyle that these people have is directly correlated to the type of food they are consuming. In other words, if they have low income and live in a cost-of-living crisis with food insecurity, there is a high chance that these people will incline towards low-cost, unhealthy food. As a result, this will directly contribute to the increase in obesity. Alongside this, as with the Centers for Disease Control and Prevention (CDC), it is necessary to maintain a healthy lifestyle in order to maintain and achieve a healthy weight, and this is directly linked to engaging in healthy lifestyle behaviors. Compiling these arguments, it can be analytically stated that, if a person is low in income, it is not possible for the person to maintain a healthy lifestyle. This is because one of the major

factors within healthy lifestyle behavior is healthy eating. This includes better diet planning, intake of healthy food, and avoiding disaggregated food pattern components like added sugars and alcoholic beverages [7].

There is a direct connection between obesity and the economy, apart from the connection between the lifestyle of an individual and the obesity rate. Hammond and Levine suggest that if there had been an absence of obesity, Medicaid spending would be 11.8% lower, as well as Medicare spending would be 8.5% lower [8]. This suggests that even though there is a relevant connection between the impact on spending due to obesity, this is also true that there is a link between increases in the prevalence of obesity and the increases in spending over time. Alongside that, there have also been some policy changes in the economy due to the prevalence of obesity. Hammond and Levine have found that the prevalence of obesity in developed countries has resulted in certain increased economic developments, such as the GDP (Gross Domestic Product). This link again establishes the connection that the people have with their income and lifestyle. In other words, it is evident that the people with lower income live with poverty and unemployment and hence live in an area that has a higher density of food outlets and sometimes sell energy-dense and unhealthy foods [9]. To analyze this and connect the link between economic and obesity, these people have low physical activity and from another perspective promote unhealthy food, with lower prices. People with a fast lifestyle and comparatively lower income are more drawn towards these foods. Therefore, this contributes to the effect that low socioeconomic status (SES) has on obesity. However, there is one more factor associated with obesity, which is individual employment. Analytically arguing, it can be said that the increase in medical costs and financial standing are results of poor health conditions. Therefore, these poor health conditions have the full potential for a person to be unemployed and leading to the selling of unhealthy food and less physical activity, increasing obesity. The link between food prices is not only limited to the substitutes of organic food, but also restaurant food, and even food at home. The previous paragraph talks about the condition of people with low income, and the connection between people losing jobs because caused by obesity. However, this is also connected to the people with higher incomes and who prefer outside foods. According to Sturm and Datar, differential availability and affordability of foods have been suggested as important contributors to income and racial/ethnic disparities in obesity rates [10]. This suggests the fact that even though one of the major contributors to obesity can be considered as the low prices of the harmful foods and consumption of those foods, on the other hand, the availability of healthier and organic food is also a contributing factor to obesity. Additionally, the availability of food through restaurants can be categorized under the technological changes that contribute to U.S. obesity. According to Powell, technological changes

have contributed to the U.S. obesity epidemic, as people are consuming food ordered through technological apps, reducing their physical activities of the people [5]. Hence, this statement suggests the fact that not only the increase in prices of the subsidies should be applicable, but also the per capita number of restaurants, lower real food prices, and higher cigarette prices are significantly contributing factors to obesity in the country.

### 3. Discussion: Scholarly Data Analysis

The topic of obesity and its connection to food prices is one of the most researched topics in the United States. Since the 1970s, obesity has been one of the most examined factors in the United States as the obesity rate increased up to 50% during that time [11]. Henceforth, the topic of obesity has been one of the most consistent topics of research for various scholars like Han, Powell, Russell and many more. In order to present the Data collected from the World Health Organization, it can be said that: from the World Health Organization, in 2022, 1 in 8 people lived with obesity worldwide; In 2022, 2.5 billion adults aged 18 years and older were overweight; In 2022, among the 2.5 billion adults, 890 million had obesity; In 2022, 43% of adults aged 18 years and older were overweight; In 2022, 16% adults aged 18 years and older were obese; In 2022, 390 million children, as well as adolescents who were under the age of five and 19, were overweight; In 2022, among 390 million children as well as adolescents who were under the age of five and 19, 160 million were obese; In 2024, 35 million children who were under the age of five were overweight [12].

The data presented by the World Health Organization shows the growing concern for the issue of obesity, not only in the United States but worldwide. To highlight other people's data and some of the research done by other scholarly researchers on this topic, the first one can be considered as the research by Cherie Russell, Jillian Whelan, and Penelope Love. This research assesses the cost of healthy and unhealthy diets. The study by Russell et al. holds a systematic review of the relevant studies of the higher-income countries between 2006 and 2021, among which one was the United States [13]. In the research, the largest number of studies on food prices were found from the United States, about 47. To analyze the data collected in this research, the data provided strictly showcases the message that the United States is one of the major countries that studies the matter. Another research was conducted by a group of scholars, namely Eric A. Finkelstein, Kiersten L. Strombotne, Chen Zhen, and Leonard H. Epstein, who presented their research as a review [9]. This research examines the link between the changes in beverage and food prices and the weight outcome among consumers in the United States. Like this study, Finkelstein et al. also collected original articles from Medline, Google Scholar, and PubMed, with the keywords such

as "health", "price elasticity", "BMI", "Tax", "subsidy", "obesity" and others. This study found that targeted subsidy/tax policy can have a positive effect on the weight and dietary outcomes of children rather than adults. To analyze the review conducted by Finkelstein and the other scholars, it can be said that the studies collected in the review suggest only one thing, which is that the changes in food prices and food price fluctuations are also probable and necessary to promote healthier eating and weight loss results [14]. Alongside this, these changes are probably going to have to be big, not just one or a couple of food categories. The reason for this is demonstrated by the SSB studies. Switching too easily avoids taxes that are applied narrowly to replace goods. This is because the goods that are subject to taxes do not account for a significant enough portion of energy consumption and have a major impact on weight. Therefore, the link between changes in food prices and changes in the prevalence rate of obesity is directly interconnected.

Overall, there is a huge discussion about the complex relationship between food, food price, the lifestyle of the people, the economic condition of the people, the economic condition of the country and the prevalence of obesity. Firstly, the food pricing depends on the policies that are made. Secondly, the food prices affect the decision-making of the people. In other words, the food with less nutrition is easily available to people at a lower cost compared to the organic vegetables and fruits and food with high nutritional values. On the other hand, from a reverse perspective, the prevalence of obesity also has several contributions to the lifestyles of people. This includes the loss of employment, an increase in medical costs and even death. Therefore, it can be said that there is a huge complexity between food prices and the prevalence of obesity. In this situation, there can be certain solutions that can be discussed. One of them is the implementation of higher taxes on unhealthy foods and subsidies for nutritious foods, as stated by Cory et al. in their research. Based on this, it can be stated that this will result in less consumption of unhealthy foods and a change in food consumption patterns [15]. Alongside this, if the healthy food costs less, people will be more inclined towards buying healthy food. This will make healthy behavioral choices more affordable and available. Not only this, but the change in food consumption pattern will also then have a positive effect on the economic conditions of people, lower Medicare costs, and physical and mental health.

Another research idea conducted by E. Han and L.M. Powell has also conducted a study on the effect of food prices on the prevalence of obesity. However, this research was conducted only among the young adults. This result suggests that time-varying individual characteristics, such as working status, marital status and school enrolment status, may override the effect of changes in food prices for young adults [1]. On the other hand, there is more research necessary to determine if food subsidies or taxes,

particularly soft drink and fast-food taxes or subsidies for fruit and vegetables, could be effective policy measures to curtail the increasing prevalence of obesity among young adults. Overall, it can be said that there are more than just factors that influence the rise in the obesity rate. However, among these few are very crucial, and the changes in the food pricing are one of the most important. This can be said because, when and if the food prices of the substitute products of the organic food are increased and more taxes are implemented on them, it is likely for people to go for organic food rather than its substitutes. This will automatically force people to shift to healthier food habits and hence reduce their fat consumption. As a result, the rate of obesity in the United States will come to a check. Apart from this, it is also clear that not only will taxes on food prices lower the rate of obesity, but also the availability of the products in the market

#### 4. Conclusion

This research aimed to evaluate the extent to which various food prices are directly associated with the prevalence of obesity in the United States. Building on the various scholarly articles and data, the research established the argument that the presence of obesity has various contributing factors related to food prices and policies and also affects the health of people. The topic of obesity in the United States has existed since the 1970s, when the percentage doubled that very year. Henceforth, the issue has become one of the most concerning issues of all time in the country. Apart from these, studies have been found where scholars have collected research from developed and economically stable countries to study the issue of obesity and found out that the United States is the country with the largest number of studies on this issue. This indicates how the issue has been a concern to scholars worldwide. As the multiple contributing factors include food prices, environmental influence and circumstances, economic factors, genetic factors and so on. However, the most important contributing factor to the prevalence of obesity is the low cost of unhealthy food compared to that of healthy and organic food. This has led to people buying unhealthy food because of low income and food insecurity. Food insecurity occurs when a person with low income cannot buy a specific food and goes for a food with a lower budget. This has multiple effects on people, even leading to unemployment. Even though all these factors are correlated, the loop can be broken only if there is a change in the food pricing policies where the food pricing uses taxes on unhealthy foods and subsidies for healthy foods, but not for healthy and organic foods. Apart from this, the technological development and the availability of restaurant food at a cheaper rate also contribute to the prevalence of obesity. Overall, the changes in food prices

do contribute hugely to the prevalence of obesity in the country, and to eliminate that, it is not only taxes that the government need to focus on, but also additional contributing factors that are all interconnected.

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