

THE PROMOTION OF HEALTH THROUGH UNHEALTHY TAX: A WAY TO REDUCE THE CONSUME OF PARTIALLY HYDROGENATED OILS

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Abstract: This article presents the subject of reduce the consume of partially hydrogenated oils to promote health through corrective taxes, also known as pigovian taxes. The study aims to reflect on its legal viability, especially in the Brazilian context. To enable this analysis, some elements will be considered, such as succinct notes regarding the health fundamental right, the modifiable risks factors of noncommunicable diseases, mainly, unhealthy diet and the artificial trans fat factor, conceptualizing and delimitating these concepts. The leading experiences related to the theme and the criticisms will also be demonstrated.

Keywords: Health; Unhealthy Food; Partially Hydrogenated Oils, Extrafiscality; Health Tax.

Summary: Introduction; 1 Taxation as an instrument to promote the fundamental right of health; 1.1 Health as a fundamental right; 2 Reducing risk factors of noncommunicable diseases through the implement of a healthy nutrition with extrafiscality; 3. International Experiences. 3.1. The Denmark Experience.; 3.2. The United States Experience; 3.3. Brazilian Experience; References

INTRODUCTION



he present paper focus on the need of improvements in the unhealthy food scenario. In order to achieve this goal, the best measure available is the use of corrective taxes in an extrafiscality way. Therefore, this research analyzes the easiest modifiable risk factor of noncommunicable diseases: unhealthy diet; and the best manner to nudge this change is using taxation. Our question is if taxation should be positive, negative or neutral in order to change individuals behaviors towards a healthy food.

Therefore, the relevance of the subject is the detection of the most effective manner to reach health enhancements, which can reflect on a globe scale reduction of noncommunicable diseases risk factors.

At this point, the main problem arises: is the use of corrective taxes, opposed on partially hydrogenated oils (PROs), capable of improve society's health? We work with the affirmative hypothesis. Therefore, we look at tax policies that could manage this problem. Thus, the objective is to search different experiences with "fat" taxes in order to select the successful points aiming to implement the most suitable politic to the Brazilian context.

To attain this intent, the paper will be distributed in the following form: (a) extrafiscality on healthy products as an instrument to promote the fundamental right of health; (b) Reducing risk factors of noncommunicable diseases through the implement of a healthy nutrition induced by taxation; (c) Denmark and United States Experiences.

In this perspective, the present research proposes to analyze questions regarding noncommunicable diseases risk factors, partially hydrogenated oils and its taxation in order to achieve worldwide health improvement. Therefore, undoubtedly a relevant subject of reach and social interest deserving further analysis.

1 TAX ON UNHEALTHY FOOD AS AN INSTRUMENT TO PROMOTE HEALTH

The main purpose of this paper is to demonstrate the most suitable way to ensure the promotion of health using taxation. The proper tool to enable this intent, in our opinion, is the use of taxation as a way to discourage unhealthy food consume and induce better behavior towards feeding. Therefore, the present study aims to begin stating the fundamental right of health. In order to do so, unhealthy diet, risk factor of noncommunicable diseases, will be detailed, particularly, artificial trans fat¹, due to the possibility of modification and its impact on people's health.

Arthur Pigou, an English economist in the first half of the 20th century, developed the idea of negative and positive externalities as a way of describing the impact of products and services from a market in society. It is the Pigouvian model, which can be stated based on a very objective concept: who pollutes and does not assumes this cost, passes this negative externality on to society, therefore must be taxed in the amount corresponding to the social cost generated.

On the one hand, who, due to their product, reduces pollution, should be subsidized in measure of the savings generated to society².

The Pigouvian model has been widely debated for several uses, but it has been widely used and enshrined in issues involving the tobacco market and alcoholic beverages. The positive results in these cases motivate groups that advocate in favor of applying the model to other branches of the market, including the food.

Sunstein defends, in his book "Nudge", three theses: i) that the architect of choices (choice architect) influences how

¹ Artificial trans fat is also known as industrial trans fats, partially hydrogenated fats or partially hydrogenated oil (PHOs).

² STIGLITZ, Joseph E. *Economics of the Public Sector*, 3ed. New York, NY, USA: W. W. Norton & Cia., 1999, p224-233.

people make choices (how people make choices ”); ii) that “choice architecture” is inevitable and iii) libertarian paternalists can “give a little push” (“can nudge”) while preserves individual freedom of choice. The individual systematically fails for not being able to properly handle relevant information. Which often acts on impulses and chooses wrongly. Paternalism aims to help those failure of decisions.

Would it be possible to use these behavioral advances to address the theme of encouraging healthy eating as an instrument to reduce risk factors for diseases? Well, this is an international debate that can be useful to us.

1.1 HEALTH AS A FUNDAMENTAL RIGHT

In this context, some succinct notes on general concepts must be properly explained. First, it is necessary to establish the definition of fundamental rights adopted in Brazil. Brazilian concept of fundamental rights stem from the period post World War II and refers to rights constitutionally recognized and protected, its only form of limitation is by law or on the basis of law provided that its essential core is respected³.

In Brazil, healthcare and health protection compose a fundamental right provided for in the Federal Constitution of 1988, article 196⁴, which enroll it as a right of all the citizens and a duty of the State, ensured through social and economic politics aiming to improve general health conditions. According with the article, the State is responsible for the promotion, protection and recovery of health. Thus, the fundamental right of health, in Brazil, embrace healing and preventive provisions.

Therefore, since the constitutional recognition of health

³ SARLET, Ingo Wolfgang. *A eficácia dos direitos fundamentais*. 10. ed. Porto Alegre: Livraria do Advogado, 2011.p. 334-338.

⁴ SARLET, Ingo Wolfgang; MARINONI, Luiz Guilherme; MITIDIERO, Daniel. *Curso de Direito Constitucional*. São Paulo: Editora Revista dos Tribunais, 2012.p. 625-631.

as a fundamental right and the premise that the State must guarantee means to reduce risks of diseases, there has been an overrun on the perspective of simply seek to cure. Nowadays, the protection and promotion of this right also embrace a range of basic public services necessarily provided by the State. Other important innovation brought by the Brazilian Constitution is the universal aspect of the service and its unification into a single system of health.

In accordance with the World Health Organization, risk of diseases and risk factors can be defined, respectively, as the possibility of a healthy person became unhealthy due to risk factors, which are any attribute, characteristic or exposure of an individual that increases the likelihood of developing a disease or injury⁵.

Consequently, any action taken in order to minimize risk of diseases or risk factors encompass the essence of the health conception. In other words, establishing a minimum of public expenditures to implement health care is not sufficient, adhere public politics that prevent the advent of a health problem is highly necessary.

There are some risk factors that increase the risk of non-communicable diseases that can be reduced simply by modification of some behaviors, one of those is having an unhealthy diet.

2 REDUCING RISK FACTORS OF NON-COMMUNICABLE DISEASES THROUGH THE IMPLEMENT OF A HEALTHY NUTRITION

Considering that the adoption of a healthy diet can reduce risk factors of noncommunicable diseases, public policies, using behavioral nudges⁶ – of which we recommend unhealthy

⁵ WHO. Risk Factors. Available at: <http://www.who.int/topics/risk_factors/en/> access in 30/05/2019.

⁶ A nudge, as we will use the term, is any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or

food taxation – can promote measures to protect health that acts directly on the reduction of risk factors. The politic of nudging healthy diet must be the one elected due to the wide impact on the society, economy and public finances. If unhealthy food causes widespread diseases, then it will impact individual's life, ability to work and public budget on health. This option enables the prevention in regard to a large amount of the society, acting in a more general sense.

Furthermore, modifying the citizens diet through taxation of unhealthy food is an easier task than reducing the use of tobacco or alcohol, considering these two options involve an additional problem, addictions⁷. We should consider studies on sugar and fat causing similar addictions behaviors, in same extension and intensity.

The implement of physical activities, although possible, depends on alteration of personal habits or public infrastructure (public gardens, gymns, byke lanes, etc.), which is far more difficult to achieve than compel the industry, by means of taxation increases, to modify, discourage or ban some ingredient that

significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates. Putting the fruit at eye level counts as a nudge. Banning junk food does not. (THALER, Richard, H.; SUNSTEIN, Cass R. *Nudge: Improving Decisions About Health, Wealth, and Happiness*. Yale University Press New Haven & London, 2008. p. 6). As the authors explained, taxing the industries for the use of hydrogenated fat does not ban the use, it has the expected effect, it nudges the industries to avoid using artificial trans fat in order to prevent the taxation increase. If one industry opts to maintain the use of artificial trans fat, the amount of the tax should be relocated to mitigate the externality it created.

⁷ Addiction, according to the American Society of Addiction Medicine, is characterized by inability to consistently abstain, impairment in behavioral control, craving, diminished recognition of significant problems with one's behaviors and interpersonal relationships, and a dysfunctional emotional response. Like other chronic diseases, addiction often involves cycles of relapse and remission. It is reflected in an individual pathologically pursuing reward and/or relief by substance use and other behaviors. Without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death (ASAM. Definition of Addiction. Available at: <<https://www.asam.org/quality-practice/definition-of-addiction>> access in 12/06/2019)

increase the risk of diseases.

Therefore, the public policy recommended is the taxation imposed on the industrial activity or food consumption. The explanation that justifies it is logical and pragmatical. Two orders of arguments should be presented: first, the fact that there are less food industries than consumers, which makes it more easily audited, the possibility of enforcement is more evident. Secondly, industries produce for consumers. If they change their consumer habits for cheaper and healthier food, than industries will change theirs activity.

Another very important element is the idea of public adherence. If the tribute is imposed upon the industry, the pursuit for unhealthy products or its replacement for another product as harmful as the one taxed is avoided, absolutely necessary to guarantee the success of the public policy used.

That said, the reasons for choosing the risk factor of an unhealthy diet rest unveiled. Based on this, pertinent the demonstration of what does constitute a healthy and an unhealthy diet.

We should consider that taxation could not produce optimal results without side public policies such as food education, consumer protection against worst practices.

According to the World Health Organization – WHO, a healthy diet contains at least 400g, the equivalent to five portions, of fruits and vegetables a day⁸. Less than 10% of total energy intake from free sugars, which is equivalent to 50g, or around twelve level teaspoons. As complement, it is stated that, ideally, a person should consume less than 5% of total energy intake for additional health benefits⁹.

⁸ The WHO also states that Potatoes, sweet potatoes, cassava and other starchy roots are not classified as fruits or vegetables. Legumes (e.g. lentils, beans), nuts and whole grains (e.g. unprocessed maize, millet, oats, wheat, brown rice), also are considered healthy and integrate the ideal of a daily diet.

⁹ Most free sugars are added to foods or drinks by the manufacturer, cook or consumer, and can also be found in sugars naturally present in honey, syrups, fruit juices and fruit juice concentrates. The sugar added by the manufacturer represents another major problem, which has been target by the Mexican Government in a very

WHO has established several objectives to combat Non-communicable diseases (NCDs) - mainly cardiovascular diseases, cancers, chronic respiratory diseases and diabetes. Among these objectives are listed, among others, the following actions:

- Replace trans fats with unsaturated fats;
- Replace saturated fat with unsaturated fats;
- Manage food taxes and subsidies to promote healthy diet.

Note that the WHO program does not explicitly deal with banning trans fats, but replacing them, which can occur in several ways. On the other hand, the use of food taxes and subsidies to promote healthy diet is highlighted.

Several studies have shown significant and positive associations were found between food consumption and taxes on foods. Therefore, that showed positive results on weight outcomes, although generally small in magnitude, but with important results for low– socioeconomic status (SES) populations.

The effect of taxation on consumer behavior is controversial. There are studies that show evidence that obese individuals are less responsive to changes in the price of food than normal-weight individuals. Maybe addicted users are less influenced by price changes than free or occasional users. This may be true for junk-food, smoke and drink addicts. Trans fat taxes should aim “*to prevent obesity than to tackle it.*”

Another important aspect of a healthy diet is the salt, which should be avoided. Its intake should preferably be worldwide reduced. Indeed, this is one of the targets of the World Health Organization¹⁰, which has recently launched the “Shake Salt” campaign, consisting in a technical package for salt

successful model of “fat taxes”, for more information vide COCHERO, M. Arantxa, et al. In Mexico, evidence of sustained consumer response two years after implementing a sugar-sweetened beverage tax. *Health Affairs*, 2017, 10, 1377).

¹⁰ WHO. Global action plan for the prevention and control of NCDs 2013-2020. Available at: <<http://www.who.int/nmh/publications/ncd-action-plan/en/>> access in 11/07/2019.

reduction. In the World Health Organization words, shake package “is a set of common sense, evidence-informed policy options and interventions which support governments to lower population salt consumption”¹¹. The ideal is the consume of less than 5g of salt, equivalent to approximately one teaspoon per day. Furthermore, it is preferable to use iodized salt.

Moreover, there is a crucial facet of healthy diet: it includes the ingestion of less than 30% of total energy intake from fats. In relation to fats, there are more than one classification: unsaturated, saturated and industrial trans fats¹². Unsaturated fats, found in fish, avocado, nuts, sunflower, canola and olive oils, are preferable to saturated fats. For instance, fatty meat, butter, palm and coconut oil, cream cheese, ghee and lard, contain saturated fats, as can be verified, this type of fat is very usual in day life cuisine¹³.

Industrial trans fats, the fats found in processed food, fast food, snack food, fried food, frozen pizzas, pies, cookies, margarines and spreads, on the other hand, are not part of a healthy diet, being strongly recommended its avoidance. The major problem with this type of fat is that it is not natural. Adheres of the food preparation or meat, but the one that is artificially introduced into the food. Trans fats became popular with food manufacturers, bakeries, and restaurants in the 1960's because they can enhance the taste of some foods and help to preserve their texture. Trans fats are used in frying, also they are more durable

¹¹ WHO. SHAKE the salt habit. Available at: <<http://www.who.int/dietphysicalactivity/publications/shake-salt-habit/en/>> access in 11/07/2019. p. 12.

¹² Trans fatty acids (or trans fats) are unsaturated *trans*-isomer fatty acids, which may be monosaturated or polyunsaturated. Small amounts of trans fats occur naturally in meat and dairy products, but the largest source of these lipids in the human diet comes from artificial sources, such as partially hydrogenated vegetable oils used in cooking and food preparation (RESNIK, David. **Trans Fat Bans and Human Freedom**. Am J Bioeth. 2010 Mar; 10(3): 27–32.)

¹³ WHO. Healthy diet. Available at: <<http://www.who.int/mediacentre/factsheets/fs394/en/>> access in 11/07/2019.

than other types of oils and have a neutral taste¹⁴.

Considering that reducing the amount of total fat intake to less than 30% of total energy intake helps prevent unhealthy weight gain in the adult population, and the risk of developing noncommunicable diseases is lowered by reducing: 1. saturated fats to less than 10% of total energy intake, and, 2. trans fats to less than 1% of total energy intake, replacing both with unsaturated fats. It is possible to see that in order to achieve a healthy lifestyle and a healthy diet, some habits should be acquired¹⁵.

One of the most easily changeable dietary habits is the reduce of fats consumption, which can be achieved by a simple change of the way of cooking. For instance, removing the fatty part of meat, switch animal for vegetable oil, and instead of fry the food, boil, steam or bake it. Another alternative is to limit the consumption of foods containing high amounts of saturated fats. The trans fat, in the other hand, due to its harmful potential, must be avoided.

The last type of fat mentioned is the one that, in our opinion, must be target. In other words, the taxation must be imposed on the artificial trans fat. There are several reasons to justify this choice. Are they:

(a) it adheres from partially hydrogenated oils, which are made by a process using hydrogen gas to turn liquid vegetable oils into solids. The fats extend a food's shelf life and improve flavor and texture¹⁶. Thus, its use is superfluous. It increases

¹⁴ RESNIK, David. **Trans Fat Bans and Human Freedom**. Am J Bioeth. 2010 Mar; 10 (3): 27–32.

¹⁵ WHO. Healthy Diet. Disponível em: <<http://www.who.int/mediacentre/factsheets/fs394/en>>. Acesso em: 28/04/2019.

¹⁶ A 2002 report by the National Academy of Sciences, Institute of Medicine found a direct correlation between intake of *trans* fat and increased levels of low density lipoprotein (LDL) cholesterol. LDL cholesterol is commonly known as “bad” cholesterol, because it contributes to clogged, damaged arteries (INSTITUTE OF MEDICINE. Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids. September 5, 2002. Available at: <<https://www.nap.edu/read/10490/chapter/1>> access in: 11/07/2019). For more information see the US Food and Drug Administration Trans Fat page. Available at:

widely the risk of develop illnesses and only represents benefit for the industries, since its function consists in improving texture, durability and profitability.

(b) artificial trans fats are not necessary to human's organism nor to food preparation. It is only an industrial artificial process that can be banned without major issues. Although the fact that there will probably be an increase on the production overheads, this cost can be mitigated through the pigovian tax, considering it will, in the long-term, represent a reduction of governmental healthcare expenditures.

(c) is, scientifically proved, the most prejudicial of all sorts of fats¹⁷, and, to emphasize, it contributes to a range of cardiovascular diseases.

Hence, an unhealthy diet consists, basically, on an intake superior to 10% of sugars, 5% of salt and 30% of fat, in addition to a consume of less than 400g of fruits and vegetables per day.

Unhealthy diet is one of the main risk factors of noncommunicable diseases, which are responsible for 70% of all deaths globally (equivalent to 40 million people each year). Of those, over 37% deaths (around 15 million people) is considered premature, occurring between the ages of 30 and 69 years. The main types of noncommunicable diseases are: cardiovascular diseases (17.7 million deaths annually), followed by cancers (8.8 million), respiratory diseases (3.9million), and diabetes (1.6 million)¹⁸.

Cardiovascular diseases (CVDs) are the number one cause of death globally, representing 31% of all global deaths. Most cardiovascular diseases can be prevented by addressing behavioural risk factors¹⁹ such as tobacco use, unhealthy diet and

<<https://www.fda.gov/food/populartopics/ucm292278.htm>> access in 11/07/2019.

¹⁷ The harms inflicted by the consume of trans fat will be analyzed subsequently.

¹⁸ WHO. Noncommunicable diseases. Available at: <<http://www.who.int/mediacentre/factsheets/fs355/en/>> access in: 30/04/2019.

¹⁹ According with World Health Organization "The effects of behavioural risk

obesity, physical inactivity and harmful use of alcohol²⁰.

Thus, considering all the arguments above, addiction, less extreme change of habits, higher probability of larger social adherence, we comprehend that targeting artificial trans fats is the most effective public policy and can reach a larger quantity of people. That is the reason why we prefer and suggest taxing the industrial use of partially hydrogenated fat, in order to promote the fundamental right to health²¹.

The adoption of healthy diet is influenced by many factors and complex interactions, such as income, availability and affordability, individual preferences and beliefs, cultural traditions, as well as geographical, environmental, social and economic factors²².

Considering the multiplicity of factors, the creation of a healthy food environment that enables people to adopt and maintain healthy dietary practices depends on a joint action of Governments, public policies and the private sector.

That said, in order to do so, in the better possible way, the present study will consider two different scenarios, the

factors may show up in individuals as raised blood pressure, raised blood glucose, raised blood lipids, and overweight and obesity. These “intermediate risks factors” can be measured in primary care facilities and indicate an increased risk of developing a heart attack, stroke, heart failure and other complications”. (WHO. Cardiovascular diseases. Available at: <<http://www.who.int/mediacentre/factsheets/fs317/en/>> access in: 12/07/2019)

²⁰ WHO. Cardiovascular diseases. Available at: <<http://www.who.int/mediacentre/factsheets/fs317/en/>> access in: 12/07/2019

²¹ Another reason is the World Health Organization’s increase estimation of annual total deaths due to noncommunicable diseases from 38 million to 52 million until 2030, therefore it is absolutely necessary to take measures capable of mitigate this catastrophic scenario. (WHO. Global Status Report. Available at: <http://apps.who.int/iris/bitstream/10665/148114/1/9789241564854_eng.pdf> Access: in 12/07/2019)

²² WHO. Healthy Diet. Available at: <<http://www.who.int/mediacentre/factsheets/fs394/en/>>. Access in: 28/04/2019. Promoting a healthy food environment, including food systems which promote a diversified, balanced and healthy diet, requires involvement across multiple sectors and stakeholders, including government, and the public and private sector.

Denmark experience, as well as one administrative experience, the United States, provided by the Food and Drug Administration, must be closely observed, due to its triumph.

3. THE DENMARK EXPERIENCE

Denmark was the first country in the world to set standards that regulated industrially-produced trans fats in food. The Danish Nutrition Council study on the effects of trans fats on public health in that country was pioneering.

The trans fat ban was established in 2003 by (Foodstuffs Act)²³. Since 1 June 2003, the content of trans fatty acids in the oils and fats covered by this Order must not exceed grams per 100 grams of oil or fat. In products which are claimed to be “free from trans fatty acids”, the content of trans fatty acids in the finished product shall be less than 1 gram per 100 grams of the individual oil or fat.

Danish legislation is quite precise in the definition of trans fatty acids. The standard states that for the purposes of this Order, “(...) *trans fatty acids are defined as the sum of all fatty acid isomers with 14, 16, 18, 20 or 22 carbon atoms and one or more trans double bonds, i.e. C14:1, C16:1, C18:1, C18:2, C18:3, C20:1, C20:2, C22:1, C22:2 fatty acid trans isomers, but only polyunsaturated fatty acids with methylene interrupted double bonds*”.

The European Union followed Denmark's promising and successful path and edited the Regulation no. 1169/2011 where trans fat is defined as “*fatty acids with at least one non-conjugated (namely interrupted by at least one methylene group) carbon-carbon double bond in the trans configuration.*”

The scope of this regulation was trans fats produced

²³ Section 13, Section 55, subsection 2 and Section 78 subsection 3 of Act No 471 of 1 July

1998 on foodstuffs etc.

industrially. The primary dietary source of industrial trans fats is partially hydrogenated oils. Partially hydrogenated oils generally contain saturated and unsaturated fats, among them trans fats in variable proportions (with trans fats ranging from a few up to more than 50%), according to the production technology used. Trans fats can also be naturally present in food products derived from ruminant animals such as dairy products or meat from cattle, sheep or goat.

A Commission Regulation amending Annex III to Regulation (EC) no. 1925/2006 of the European Parliament and of the Council, with the aim of treating artificial trans fat, other than trans fat naturally occurring in fat of animal origin.

On 1 October 2011, the Danish Fat Tax Act came into effect. The tax of per kilogram of saturated fat is imposed on all food products produced in and imported into Denmark, at a rate around EUR 2.15.

The Act did not affect products with a lower percentage provided by law, intended for export or used medicinally. Some criticisms were directed at Danish law, the most important of which was the fact that the rule does not consider adequately dealing with insertion into the European Union and the difficulty of control at open borders.

Denmark's legislation served as an example for several other laws and even for the European Union. The European model adopted the Danish measure on maximum limit of trans fat, other than trans fat naturally occurring in fat of animal origin, in food which is intended for the final consumer and food intended for supply to retail, of 2 grams per 100 grams of fat. Definitions of "fat" and of "trans fat" in line with the definitions in Annex I to Regulation (EU) No 1169/2011.

An obligation for business to business transmission of information on the amount of trans fat in foods when it exceeds the limit of 2% of fat.

Food which does not comply may continue to be placed

on the market until 1 April 2021.

4. THE UNITED STATES EXPERIENCE

In January 2006, Food and Drug Administration²⁴ required the food industry to include, on the Nutrition Facts label, the amount of trans fat in food. Since the institution of this requirement, many processed foods have been reformulated to reduce the amount of trans fat. This improvement is attributed to the impact the large amount of trans fat those food used to contain would have on consumers. Despite that, a substantial number of products still contain partially hydrogenated oils²⁵.

In 2007, the New York City Health Council, stimulated by the government of the mayor, Michael Bloomberg, banned trans fatty acids in restaurants, bakeries, soup kitchens, park concessions and other public places where food was served.

According to a report in JAMA Cardiology, three years after restrictions were imposed, there was an 6,2% decline in hospital admissions for heart attacks and strokes in counties that banned trans fats compared with those that did not²⁶.

The policy success is granted to the fact that it did not target products that have natural trans fat, such as dairy products and red meat, it only affected the artificial ones.

In June of 2015, the Food and Drug Administration,

²⁴ Food and Drug Administration (FDA) is an agency within the Department of Health and Human Services. The FDA's organization consists of the Office of the Commissioner and four directorates overseeing the core functions of the agency: Medical Products and Tobacco, Foods, Global Regulatory Operations and Policy, and Operations. Food and Drug Administration issues regulations to implement its statutory authority. The regulations can create binding obligations and have the force of law. FDA. Food Guidance & Regulation. Available at: <<https://www.fda.gov/food/guidanceregulation/default.htm>> access in 12/04/2019.

²⁵ FDA. Trans Fat. Available at: <<https://www.fda.gov/food/populartopics/ucm292278.htm>> access in 11/07/2019.

²⁶ BRANDT, Eric J; et al. Hospital Admissions for Myocardial Infarction and Stroke Before and After the Trans-Fatty Acid Restrictions in New York. JAMA Cardiol. 2017;2(6):627-634. doi:10.1001/jamacardio.2017.0491.

finalized the determination that partially hydrogenated oils (PHOs), the primary dietary source of artificial *trans* fat in processed foods, are not “generally recognized as safe” (GRAS) for use in food, based on a thorough review of the scientific evidence.

In accordance with this determination, the food manufacturers have two options: reformulate products that contain partially hydrogenated oils, banning it, or petition the Food and Drug Administration to permit specific uses of partially hydrogenated oils. If the product contains naturally occurring *trans* fat it must be informed on the nutrition label of the product.

In order to allow the implement of the determination, Food and Drug Administration has set a compliance period of three years. FDA allowed an extension to January 1, 2020 for products produced prior to June 18, 2018 to work their way through distribution.²⁷ This action is expected to reduce coronary heart disease and to prevent thousands of fatal heart attacks each year.

5. BRAZILIAN EXPERIENCE

Brazil has the principle of essentiality, through the technique of selectivity, constitutionally guaranteed for industrialized products, in its article 153, third paragraph, item I. This determines that essential products must be taxed at a lower rate and non-essential products are taxed to a higher rate.

Trans fats receive a beneficial tax treatment in our system, with a rate of Tax on Industrialized Products in the percentage of 0% (zero percent), exactly contrary to what determines the principle of essentiality.

Wine, which should be considered a functional food, has a rate of 10% (ten percent) of IPI and salmon 5% (five percent),

²⁷ FDA. *Trans Fat*. Available at: <<https://www.fda.gov/food/food-additives-petitions/trans-fat>> access in 11/07/2019.

while trans fats receive an unfair and inadequate tax treatment.

The Common Nomenclature of Mercosur, under TIPI 15.16, includes “*Animal or vegetable fats and oils and their fractions, partially or totally hydrogenated, interesterified, re-esterified or elaidinized, even refined, but not otherwise prepared*”.

This heading covers animal or vegetable fats and oils which have undergone only particular chemical transformation, of the types listed below, as well as fractions which have undergone the same treatment as those animal or vegetable fats and oils.

NCM	DESCRIPTION		TAX RATE (%)
15.16	Animal or vegetable fats and oils and their fractions, partially or totally hydrogenated, interesterified, re-esterified or elaidinized, whether or not refined, but not otherwise prepared.		
1516.10.00	-	Animal fats and oils and their fractions	0
1516.20.00	-	Vegetable fats and oils and their fractions	0

Hydrogenated fats and oils are considered as follow²⁸:

“Hydrogenation is carried out by contacting the products with pure hydrogen, under appropriate conditions of pressure and temperature and in the presence of a catalyst (usually finely divided nickel). This operation aims to raise the melting point of fats, to increase the consistency of oils, by transforming

²⁸ BRASIL. Tabela do IPI. Disponível em <http://receita.economia.gov.br/aceso-rapido/legislacao/documentos-e-arquivos/tipi-1.pdf/view>. Acesso dia 09.09.2020 às 15:24.

unsaturated glycerides (oleic, linoleic acids, etc.) into saturated glycerides (palmitic, stearic acids, etc.). highest melting point. The degree of hydrogenation and the final consistency of the products depends on the process used and the duration of the treatment. This heading includes:

1) The partially hydrogenated products, with modification of the cis form of the unsaturated fatty acids (fatty acids) in trans form to raise their melting point (even when these products tend to separate into pasty and liquid layers).

2) Fully hydrogenated products (for example: oils transformed into pasty or solid fatty substances).

The products subjected to hydrogenation, most of the time, are oils from fish or marine mammals and some vegetable oils (cottonseed, sesame, peanut, rapeseed, soy, corn, etc.). The oils, partially or totally hydrogenated, of these species often enter the composition of the food fat preparations of heading 15.17, because hydrogenation not only causes them to harden, but also makes them less easily oxidizable in contact with air, improving their taste and smell, and even the presentation (by whitening).

Hydrogenated castor oils called opalwax belong to this product group ”.

Are inter-esterified, re-esterified or elaidinized fats and oils:

“1) Interesterified (or transesterified) fats and oils. The consistency of an oil or a fat can be increased by appropriately modifying the position of the fatty acid radicals (fatty acids) in the triglycerides contained in the product. The reaction and displacement of the esters can be stimulated by catalyst agents.

2) Re-esterified fats and oils (also called esterified) are triglycerides obtained by directly synthesizing glycerol with mixtures of free (fatty) fatty acids or with refining acid oils. The position of the fatty acid radicals (fatty acids) in triglycerides differs from that normally found in natural oils.

Oils obtained from olives, which contain re-esterified oils, are included in this heading.

3) Elaidinized fats and oils are fats and oils subjected to a treatment that causes a substantial transformation of the radicals of cis unsaturated (fatty) acids from the cis form to the trans form.

The products described above are classified in this heading,

even if they have the characteristic of waxes and have subsequently been deodorized or subjected to a similar refining process and even when they can be used for food purposes as they are. However, this heading does not include fats and oils, and their fractions, hydrogenated, 15.16 III-1516-2 etc., which have undergone further treatment, such as texturing (modification of the texture or crystalline structure) for food purposes (heading 15.17). Also excluded from this heading are fats and oils, and their fractions, hydrogenated, inter-esterified, re-esterified or elaidinised, when the modification involves more than one fat or oil (positions 15.17 or 15.18) ”.

On the other hand, the country follows the path of banning the use of trans fats in food, according to a resolution by the health agency.

Resolution of the Collegiate Board - RDC No. 332, of December 23, 2019, of the National Health Surveillance Agency (ANVISA), defined the requirements for the use of industrial trans fats in food. The standard established a gradual and progressive limitation of the use of this type of fats.

The Resolution applies to all foods, including beverages, ingredients, food additives and technology aids, including those intended exclusively for industrial processing and those intended for food services.

The standard also defines trans saturated fats, for application purposes, as follows:

- synthetic conjugated linoleic acid: are all geometric isomers and positional effects of conjugated bonded linoleic acid obtained by alkaline isomerization of oils and fats;

- industrial trans fats: are all triglycerides that contain acids unsaturated fatty acids with at least one trans double bond, expressed as acids free fatty acids, and which are produced through partial hydrogenation, treatment thermal or alkaline isomerization of oils and fats, and;

- partially hydrogenated oils and fats: these are all oils and fats submitted to the hydrogenation process and which have an iodine index greater than 4 (four).

The production, import, use and supply of synthetic conjugated linoleic acid for use in foods and foods formulated with these ingredients are prohibited. There will be three stages.

The resolution foresees its implement in three stages. The first, that should be fully applied until first of July of 2021, determines that trans fat in the industrial production of refined oils cannot exceed 2% of the total amount of fats. The second phase limits the presence of trans fats in all foods destined to consumers or used for food services to 2%. This stage must be achieved until first of January of 2023. Then starts the third staged, the total banning of the trans fat for consumption purposes. This ingredient may still be used for industrial purposes, but not as a final ingredient in consumer recipes. The non-compliance constitutes a health infraction.

Thus, the country finally has an effective policy to combat the indiscriminate use of this harmful food.

CONCLUSION

Reducing the consumption of partially hydrogenated oils is a theme that arises to provide greater protection to human's health. In this context, the use of corrective taxes would allow us to improve health in a large scale, reducing government expenditures with healthcare. Considering this purpose, deeper reflections on its concepts, requirements and assumptions, are imperative.

As demonstrated, identifying the most effective way to reach public health habits is crucial to reduce noncommunicable diseases risk factors. The easiest manner to achieve this goal is to tax the use of artificial trans fat, directly on industries.

Therefore, the use of corrective taxes, opposed on partially hydrogenated oils (PROs), is capable of improve society's health for several reasons: (a) if the nudge works, at least in part, there will be less, or even none, products containing artificial

trans fat available for public consumption; (b) the public adherence is more probable considering the explanation of the harm this fat can inflict and the fact that it is an artificial process used by industries in order to obtain better profits; (c) the daily cook products will not be affected, the change that will necessarily be done regards the industrial procedures, which means that those products will still be available, only healthier.

Notwithstanding the potential and proved benefit of the action, considering public health promotion and economic cost-savings, there are arguments against trans fat bans.

The first is the restriction of freedom, which was previously answered. In the model we propose, there will not exist a restriction of freedom, the industry can still use partially hydrogenated oil, as long as it affords its tax²⁹.

The second concerns a very important aspect: human diet regulation can lead to social and economic injustice? Policies that make it more difficult to obtain affordable nutrition, such as food taxes, may exacerbate socioeconomic inequalities and, also, the levels of unhealthy nutrition, therefore, the occurrence of noncommunicable diseases is more frequent on low- and middle-income countries³⁰.

The policy we propose intends to strike this last argument. The use of corrective taxation acts exactly in this problem core, the tribute collected from the industry must be reverted to support healthy food investments. The main idea is, from the study of other “fat” taxes or “fat” policies experiences, select its successes and the failures to elaborate the most suitable policy.

Although the search of different experiences with “fat”

²⁹ RESNIK, David. Trans Fat Bans and Human Freedom. Published in final edited form as:

Am J Bioeth. 2010 Mar; 10(3): 27–32. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3941190/> Access in: 30/04/2019.

³⁰ Over 80% of the previously mentioned “premature” deaths occur in low- and middle-income countries. (WHO. Noncommunicable diseases. Available at: <http://www.who.int/mediacentre/factsheets/fs355/en/>) access in: 30/04/2019).

taxes has demonstrated the reasons why some of those were successful and others were not, there is still a long path to cover in order to implement, efficiently, the unhealthy taxes in Brazil.

In 2019, ANVISA (the national agency of sanitary vigilance in Brazil) has published the 332/2019 Resolution³¹ aiming to ban the use and consumption of trans fats until 2023.

This was the first step taken forwards to reduce the consumption of trans fat in Brazil. Therefore, the present paper collects foreigners experiences to contribute to the successful accomplishment of the Brazilian resolution goals.



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