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STATISTICAL AND TASTE-BASED DISCRIMINATION:
AN APPLICATION OF DISCRIMINATION
DECOMPOSITION INDEX (DDI) USING FIRST- AND
SECOND-GENERATION IMMIGRANTS

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KEYWORDS: Labor market discrimination, First- and second-generation immigrants, Statistical and taste-based discrimination.

JEL class.: C43, J15, J23, J64, J71

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Statistical and taste-based discrimination: an application of Discrimination Decomposition Index (DDI) using first- and second-generation immigrants

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Abstract

Economic theory splits discrimination into statistical and taste-based. While the logic underlying the first one consists of using information on a group of individuals as proxy of a specific worker. In the case of taste-based, the discrimination against a group of individuals, is connected to a personal preference of the employer rather than any lack of information. This second kind of discrimination is incompatible with the maximization of entrepreneur's profits. To assess the difference between the two, we constructed a specific index of ethnic discrimination, capable to separate the two kinds of discrimination using native, first- and second- generation immigrants (Busetta et al., 2018; Busetta et al., 2020). The aim of this paper is to apply this Index, previously used only in the Italian context, to several European countries, using the dataset "Condition and Social Integration of Foreign Citizens, SCIF 2011-2012", to compare the levels of statistical and taste-based discrimination in different societies.

KEYWORDS: Labor market discrimination, First- and second-generation immigrants, Statistical and taste-based discrimination.

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1. Introduction

Economic theory splits discrimination into statistical and taste-based one. While the first one holds when the judgement of an individual is determined by group characteristics rather than individual ones, the second occurs when the preference for a certain group is based on tastes, rather than any economic rationale (see Lahey, 2008 for a review).

In terms of discrimination based on race and nationality, the U.S. National Research Council gives a definition of ethnic or racial discrimination focusing on the inherent practices "differentiated based on race that disadvantage a particular social group and consequent

differences in treatment not adequately justifiable, if not for reasons related to ethnicity". Taste-based in the case of racial discrimination, not only includes xenophobia and racism, but also personal preferences, such that the remaining common point is that the discrimination against a group of individuals, regardless the additional information they have about the candidate (Zschirnt and Ruedin 2016). This behaviour is incompatible with the maximization of entrepreneur's profits, becoming "a priority for him/her to avoid the psychic cost of maintaining contact with the" wrong "race [...]" (Riach and Rich 1991, 247).

As a result, employers who are not driven by personal preferences related to race will gain a competitive advantage over those who are (Zschirnt and Ruedin 2016).

On the contrary, in the cases of statistical discrimination, ethnicity generates discrimination because the employer lacks part of the information, and he/she uses information on the group as a proxy of the unobservable information component (Phelps 1972, Arrow 1972). For this reason, statistical discrimination is considered to be an acceptable price not to incur in the increase of costs to obtain all the additional relevant information on the specific individual, even if it not always produces to choose the most qualified candidate (Bursell 2007). Consequently, while statistical discrimination is generally considered to be efficient in cases of imperfect information (Arrow, 1973b), TB discrimination is inefficient in any case and under all conditions, in terms of social well-being (Becker, 1971).

To assess the difference between the two forms of discrimination, we constructed a specific index able to separate the two kinds of discrimination using the difference in treatment devoted to native, first- and second- generation immigrants (Busetta et al., 2018; Busetta et al., 2020). Indeed, we used information regarding discrimination associated with first- and second-generation immigrants to compare it with the one associated with native candidates.

The aim of this paper is to apply the Discrimination Decomposition Index (from now on DDI), using the dataset "Condition and Social Integration of Foreign Citizens, SCIF 2011-2012", provided by the Italian National Institute of Statistics (ISTAT). This dataset is based on a sample of 25,326 individuals, containing 20,379 foreign citizens, 4,251 natives born and 696 Italian citizens for acquisition. Using this dataset, we will calculate the DDI to homogeneous data regarding all European countries. In this way, we will compare the level of discrimination of different countries using an index which is perfectly comparable. This index has been previously applied only to Italian labor market, through a field experiment using call back rates and based on fictitious CVs sent to real job openings (Busetta et al. 2020).

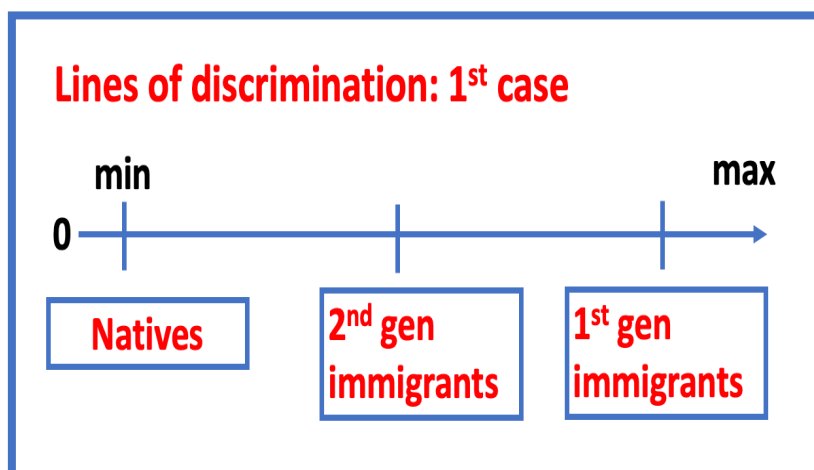
The rest of the article is organized as follows. In Section 2 we present data and methodology. In Section 3 the results of the analysis are presented. The last Section concludes our study.

2. Methods

We used the employment rate belonging to the different categories, calculated as the proportion of individuals in the state of workers (native, first- and second-generation immigrants) over the population of the same category.

Considering the case in which native is the category with the lowest associated level of discrimination while first-generation immigrants are the ones to which is associated the maximum level of discrimination, we can draw the following line of discrimination. If this is the case, somewhere in the middle, there will be the level of discrimination associated to the second-generation immigrant (Fig. 1).

Fig. 1: Levels of discrimination for the three categories of workers.



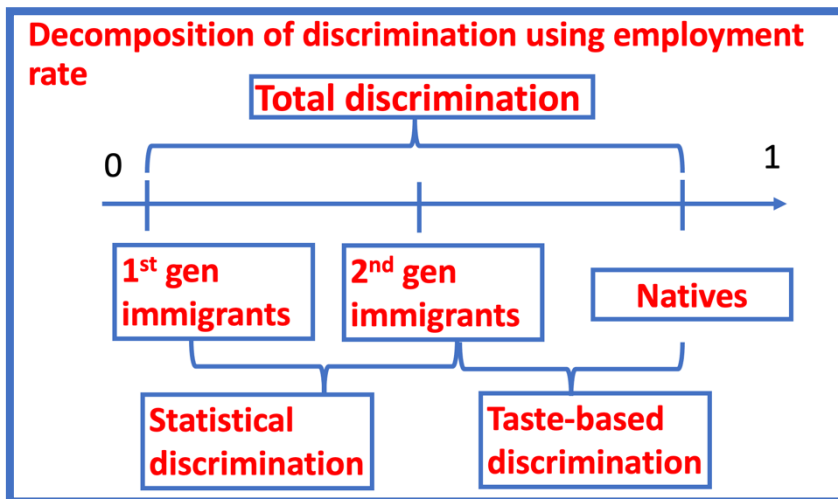
Following Eurostat's classification, we defined first-generation immigrants those who are foreign-born, second-generation immigrants the ones who are native-born with mixed background (meaning the ones who were born in Italy, but from immigrant parents) and, finally, as natives we choose the category which is native-born with native background.

Our idea is that, even if we want to admit that discrimination against the first category

of immigrants can be motivated by differences in productivity (connected for example either to linguistic gaps or to differences in acquired skills for differences in the quality of education), the same will not be admitted for the second type of individuals (because they are native language speakers always lived and studied in the country). While first generation immigrants are characterised by different education obtained in their own country of provenience. Both natives and second-generation immigrants got their education in the arriving country, at least the concluding part.

It is possible to represent the differences in discrimination between the various categories as the difference in employment rate between them. While the difference in employment rates between second- and first-generation immigrants may be due to statistical reasons, the one between natives and second-generation immigrants must necessarily be due to reasons based on taste. Therefore, we can represent the phenomenon as follow (Fig. 2):

Fig. 2: Statistical and taste-based discrimination described in terms of differences in employment rates



Following this idea, we can calculate the total discrimination, using Employment Rate (from now on ER), as:

$$\begin{aligned}
 \text{tot. discriminat.} &= \text{taste based discrim.} + \text{stat. discrim.} = \\
 &= (\text{natives ER} - \text{2nd gen ER}) + (\text{2nd gen ER} - \text{1st gen ER})
 \end{aligned}$$

From this definition, it is possible to calculate the differences between the two

discriminations previously mentioned as follow:

$$\text{stat. discriminat.} = \frac{2nd\ gen\ ER - 1st\ gen\ ER}{|natives\ ER - 1st\ gen\ ER|}$$

On the other hand, the one connected to taste-based motivations can be calculated as follows:

$$\text{taste based discrim.} = \frac{natives\ ER - 2nd\ gen\ ER}{|natives\ ER - 1st\ gen\ ER|}$$

We used such indicators as proxy of the amount of discrimination devoted to that category, and we applied DDI to measure the relevance of statistical and taste-based discrimination to immigrants in European countries for each category. An important property of the DDI is that total discrimination, the sum of the two kinds, always equal to 1 by construction. Consequently, the two parts can be expressed in percentual terms.

3. Results

Table 1 shows the amount of employment rate associated to natives, first- and second-generation immigrants collected by the Eurostat both for the 31 European countries individually, and for the average of European Union of 27 countries and of the Euro Area of 19 countries. on a population of individuals aged from 20 to 64 years old. The last three columns show respectively taste-based, statistical, and total discrimination for all countries considered invidually and the average of EU-27 and EU-19.

Negative values for taste-based discrimination imply a preference for second-generation immigrants in respect to natives, while negative values of statistical discrimination imply a preference for first-generation immigrants in respect to second-generation ones.

Table 1: Employment rates by migration status from 20 to 64 years, year 2021

2021	Natives*	sec	first	nat-sec	nat-first	sec-first	tb discrim	stat discr	total discr
EU**	73,0	73,0	64,0	0	9,0	9,0	0,0	1,0	1,0
Euro area***	72,7	73,0	63,7	-0,3	9,0	9,3	0,0	1,0	1,0
Belgium	74,8	65,3	58,9	9,5	15,9	6,4	0,6	0,4	1,0
Bulgaria	71,8	79,6	61,0	-7,8	10,8	18,6	-0,7	1,7	1,0
Czechia	79,1	75,9	80,7	3,2	-1,6	-4,8	-2,0	3,0	1,0
Denmark	79,4	75,1	66,4	4,3	13,0	8,7	0,3	0,7	1,0
Germany****	82,0	78,0	68,1	4	13,9	9,9	0,3	0,7	1,0
Estonia	80,9	80,0	72,6	0,9	8,3	7,4	0,1	0,9	1,0
Ireland	72,6	65,4	69,0	7,2	3,6	-3,6	2,0	-1,0	1,0
Greece	59,0	49,9	48,6	9,1	10,4	1,3	0,9	0,1	1,0
Spain	67,6	53,0	59,8	14,6	7,8	-6,8	1,9	-0,9	1,0
France	75,9	74,7	62,2	1,2	13,7	12,5	0,1	0,9	1,0
Croatia	67,2	59,8	63,3	7,4	3,9	-3,5	1,9	-0,9	1,0
Italy	61,0	58,0	57,8	3	3,2	0,2	0,9	0,1	1,0
Cyprus	75,0	76,0	69,8	-1	5,2	6,2	-0,2	1,2	1,0
Latvia	76,6	74,1	67,2	2,5	9,4	6,9	0,3	0,7	1,0
Lithuania	76,8	77,4	70,4	-0,6	6,4	7,0	-0,1	1,1	1,0
Luxembourg	70,0	67,5	72,4	2,5	-2,4	-4,9	-1,0	2,0	1,0
Hungary	77,4	75,6	79,9	1,8	-2,5	-4,3	-0,7	1,7	1,0
Malta	75,8	73,2	81,3	2,6	-5,5	-8,1	-0,5	1,5	1,0
Netherlands	84,7	84,6	66,1	0,1	18,6	18,5	0,0	1,0	1,0
Austria	76,7	75,1	66,1	1,6	10,6	9,0	0,2	0,8	1,0
Poland	74,3	65,4	81,3	8,9	-7,0	-15,9	-1,3	2,3	1,0
Portugal	74,5	60,4	75,9	14,1	-1,4	-15,5	-10,1	11,1	1,0
Romania	66,0	:	44,4	n.d.	21,6	n.d.	n.d.	n.d.	n.d.
Slovenia	75,6	64,6	64,8	11	10,8	-0,2	1,0	0,0	1,0
Slovakia	73,0	75,2	72,6	-2,2	0,4	2,6	-5,5	6,5	1,0
Finland	76,7	70,7	64,7	6	12,0	6,0	0,5	0,5	1,0
Sweden	84,2	80,1	65,1	4,1	19,1	15,0	0,2	0,8	1,0
Iceland	80,6	76,6	72,5	4	8,1	4,1	0,5	0,5	1,0
Norway	81,0	77,1	69,8	3,9	11,2	7,3	0,3	0,7	1,0
Switzerland	85,4	81,5	75,8	3,9	9,6	5,7	0,4	0,6	1,0
Serbia	63,9	65,8	61,7	-1,9	2,2	4,1	-0,9	1,9	1,0

Source: our processing of Eurostat data;

*native-born with native background; **European Union - 27 countries (from 2020); *** Euro area - 19 countries (from 2015); **** Germany until 1990 former territory of the Federal Republic of Germany (FRG).

Table 2 shows the same amount of employment rate associated to natives, first- and second-generation immigrants collected by the Eurostat both for the 31 European countries individually, and for the average of European Union of 27 countries and of the Euro Area of 19 countries, but in this second case employment rate is calculated on a population of individuals aged 25 to 55 years old. The use of employment rates calculated on individuals aged from 25 to 55 years old come from the idea that lower employment rates are usually associated to younger individuals, and they could affect second-generation immigrants more massively than other

categories. On the contrary, for similar but opposite reasons, higher employment rates could affect older individuals influencing more massively first-generation immigrants. For these reasons, we calculated DDI using employment rates on individuals aged from 25 to 55 years old. Effectively, this procedure slightly reduces the number of negative values of the two kinds of discrimination.

Table 2: Employment rates by migration status from 25 to 55 years, year 2021

2021	Native*	sec	first	nat-sec	nat-first	sec-first	tb_discrim	stat_discr	total_discr
EU**	81,2	81,9	67,5	-0,7	14,4	13,7	0	1	1
Euro area***	80,8	81,9	67,1	-1,1	14,8	13,7	0	1	1
Belgium	86,3	79,2	64,6	7,1	14,6	21,7	0,6	0,4	1
Bulgaria	78,8	87,1	78,4	-8,3	8,7	0,4	-0,7	1,7	1
Czechia	85,9	81,9	83,5	4,0	-1,6	2,4	-2	3	1
Denmark	84,0	77,8	69,1	6,2	8,7	14,9	0,3	0,7	1
Germany****	88,3	85,1	70,5	3,2	14,6	17,8	0,3	0,7	1
Estonia	86,0	85,3	77,6	0,7	7,7	8,4	0,1	0,9	1
Ireland	79,3	74,8	71,1	4,5	3,7	8,2	2	-1	1
Greece	67,4	63,4	52,0	4,0	11,4	15,4	0,9	0,1	1
Spain	76,4	65,5	63,4	10,9	2,1	13,0	1,9	-0,9	1
France	85,9	83,4	68,1	2,5	15,3	17,8	0,1	0,9	1
Croatia	79,8	72,4	71,9	7,4	0,5	7,9	1,9	-0,9	1
Italy	69,1	70,0	59,9	-0,9	10,1	9,2	0,9	0,1	1
Cyprus	82,4	85,0	73,0	-2,6	12,0	9,4	-0,2	1,2	1
Latvia	82,4	78,1	70,1	4,3	8,0	12,3	0,3	0,7	1
Lithuania	84,1	83,0	74,8	1,1	8,2	9,3	-0,1	1,1	1
Luxembourg	88,5	84,7	79,8	3,8	4,9	8,7	-1	2	1
Hungary	85,6	88,1	85,1	-2,5	3,0	0,5	-0,7	1,7	1
Malta	86,1	84,4	87,2	1,7	-2,8	-1,1	-0,5	1,5	1
Netherlands	89,9	89,6	69,6	0,3	20,0	20,3	0	1	1
Austria	87,4	86,0	70,3	1,4	15,7	17,1	0,2	0,8	1
Poland	83,9	83,8	82,3	0,1	1,5	1,6	-1,3	2,3	1
Portugal	84,2	78,0	81,6	6,2	-3,6	2,6	-10,1	11,1	1
Romania	75,7	:	49,4	n.d.	n.d.	26,3	n.d.	n.d.	n.d.
Slovenia	87,2	83,9	75,2	3,3	8,7	12,0	1	0	1
Slovakia	81,4	79,6	77,4	1,8	2,2	4,0	-5,5	6,5	1
Finland	83,2	82,6	67,4	0,6	15,2	15,8	0,5	0,5	1
Sweden	89,3	85,0	68,2	4,3	16,8	21,1	0,2	0,8	1
Iceland	83,3	79,2	75,4	4,1	3,8	7,9	0,5	0,5	1
Norway	85,5	81,7	73,1	3,8	8,6	12,4	0,3	0,7	1
Switzerland	91,0	87,9	80,1	3,1	7,8	10,9	0,4	0,6	1
Serbia	72,9	74,2	71,3	-1,3	2,9	1,6	-0,9	1,9	1

Source: our processing of Eurostat data;

*native-born with native background; **European Union - 27 countries (from 2020); *** Euro area - 19 countries (from 2015); **** Germany until 1990 former territory of the Federal Republic of Germany (FRG).

Considering Table 1 and 2, it emerges the presence of differentiated levels of taste-based and statistical discrimination between European countries. This result appears to be particularly relevant because, following economic theory, while statistical discrimination is considered efficient in the case of imperfect information (Arrow, 1973a), taste-based discrimination is always inefficient in terms of overall social welfare (Becker, 1971).

4. Conclusions

Understanding how the two components of discrimination affect the total one represents a guide for economic policy interventions. For this reason, in the last decades most of the studies on the topic moved from the idea of understanding whether discrimination influences the markets to the idea of explaining how it does it (Guryan and Charles 2013). Indeed, policy implications depend on which of the two discrimination prevails. In the case of statistical discrimination, the corrective to be adopted to avoid it, in terms of policy intervention, should be aimed at reducing information asymmetry (i.e. improving the information on the skills provided by the educational institutions of country of origin); in the second case, the corrective should be to improve the culture of immigrants integration (i.e. through interventions in schools and voluntary associations).

Considering our results, it would be highly recommendable to provide specific policies in both the directions: to achieve higher level of efficiency and to enhance, in this way, overall social welfare.

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