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# Higher education expansion and unskilled labour market outcomes



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## ABSTRACT

The increasing demand for higher education reduces the supply and changes the composition of unskilled secondary school graduates, and it may therefore affect their labour market outcomes. However, there is little empirical evidence on these effects. This paper analyses a large-scale expansion of higher education supply in Italy, which occurred at the end of the 1990s, to estimate the effects of the policy on the secondary school graduates' probability of being inactive, employed, unemployed, and on their wages. Robust difference-in-differences estimates show that the probability of being inactive decreases by 4.5 percent, as the policy significantly displaces individuals from inactivity. Those shifting across educational level have middle ability but favourable parental background, and would have worked in the family firm, or waited for a public competition had the expansion not taken place, indicating that a new campus nearby induces mainly those with a low opportunity cost to enrol in university. Lack of significant effects on the labour market outcomes of the workforce provides evidence in favour of the human capital hypothesis. However, the policy may have induced too little variation in the workforce to distinguish between the human capital and signalling theory.

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## 1. Introduction

The proportion of university graduates has significantly risen in all developed countries in the last decade, especially in southern European ones. According to OECD statistics, over the period 1997–2008, the proportion of graduates in the 25–64 age brackets increased by almost 60 percent in Italy, Spain, Greece, and Portugal, and by almost 40 percent in the UK, France, and Norway.<sup>1</sup> Moreover, increasing participation in higher education is a major policy objective in almost all European countries. While most recent research investigated the impact of the increased demand for higher education on the labour market outcomes of skilled-university

graduates, less attention was placed on those of unskilled-secondary school graduates (Bosio & Leonardi, 2010; Carneiro & Lee, 2011; Chevalier & Lindley, 2009; Walker & Zhu, 2008).

The consistent outflow of individuals from secondary into tertiary education reduces the supply and changes the composition of secondary school graduates who do not enrol in higher education (unskilled hereafter), and it may therefore affect their labour market outcomes. However, despite the important implications of this policy for individuals likely more disadvantaged than those who benefit from tertiary education, the empirical evidence on these effects is limited. In part, this is due to the challenge of identifying causal effects of university enrolment on unskilled youngsters' labour market outcomes. Labour markets characterized by higher participation into tertiary education may be those with a lower opportunity cost in the unskilled sector, and unskilled young adults may

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<sup>1</sup> Source: Education at a Glance (2010).

experience penalties even in the absence of increasing university enrolment.

This paper exploits the variation induced by the sharp increase in the supply of universities over a period of just a few years at the end of the 1990s to evaluate the effects of increasing participation in higher education on unskilled individuals' labour market outcomes. From the beginning of the 1990s, the government implemented a supply side policy that resulted in a widespread increase in local institutions, homogeneously scattered across the country, and in an expansion of existing universities, which boosted the range of degrees offered. Oppedisano (2011), estimating the effects of this policy on higher educational outcomes, shows that it significantly and positively affected enrolment into higher education, thereby reducing the supply of unskilled individuals. This paper evaluates the effects of the expansion that took place over the period 1995–1998, after which some regions increased their campuses, while others maintained the same universities' provision, by means of a difference in differences estimation strategy.

The Italian higher educational system has traditionally been organized at the national level, which guarantees that titles of higher education attainment are legally valid throughout Italy, independently of the institution that issues them. Universities are indeed perceived as substitutes and individuals enrol in the one nearest to their place of residence. Moreover, the Italian political situation at the beginning of the process of expansion offers an ideal setting for evaluating the impact of the program that limits the possible concerns about endogeneity of the policy one might have. The lack of institutional arrangements allowed the dominant party system to implement public policies without defining clear instructions and objectives. The increase in higher education supply was hardly driven by an economic rationale and the allocation rule was not clearly spelled out. In particular, the planning of the expansion did not take into account the drop in the potential demand for higher education. Rather, the expansion followed an indiscriminate allocation of public funds across Italian regions.

The outcomes of interest are the probability of being enrolled in university, the probability of being inactive, unemployed, and employed, and the hourly wage of unskilled individuals, defined here as those who completed secondary education but do not enrol in university. The three choices of being employed, unemployed, or inactive are mutually exclusive and add up to one.

The purpose of this paper is twofold. First, to understand where the increasing demand for higher education originates from, and its characteristics, in terms of observable talent and the sorting process of the unobservable component. The new flow of enrollees can originate from the population of individuals in paid works or in financially unproductive activities, which has important financial implications in terms of foregone earnings and therefore the overall implicit financial cost of the policy. This provides information on the impact of the policy on youngsters' probability of being inactive. The fraction of young people in the 20–24 age brackets not in employment, education, and training has increased in the

European Community: it passed from a 7.7 value in 2000 to 8 in 2007, and 8.4 in 2010, also as a consequence of the Global Recession.<sup>2</sup> This phenomenon is therefore becoming the focus of concern for policy makers. Understanding the effect of a reduction in the monetary cost of accessing higher education on youngsters' inactivity has important policy implications.

Second, if the increasing demand for higher education originates from the workforce, findings will provide information on whether labour market outcomes are determined under the signalling or the human capital theory. While the signalling model establishes that even though investment in education might be profitable for single individuals, they are not beneficial for the society as a whole, the human capital one predicts that an increase in educational attainment raises productivity and economic growth. The controversy in the debate between human capital and signalling has been difficult to resolve because the estimation of the earning equation universally reveals a positive causal effect of years of schooling on earnings, which is consistent with both the human capital theory and the signalling one. The two models have different predictions on the effects of increasing higher education participation on unskilled labour market outcomes: while under the signalling model the value associated with secondary education may decline if it reflects a lower ability composition of secondary school graduates, under the human capital model it may increase if skilled and unskilled workers are imperfect substitute in production, and it should not be affected otherwise.

Results indicate that the probability of being enrolled in university increases by 2 percent in regions where new campuses were instituted. The new inflow originates from the workforce and from unproductive activities, with the effect on the latter being larger and significant. Those shifting educational level as a consequence of the policy have on average middle ability and fathers with a college degree. When looking at the reasons for not enrolling in university, the policy significantly reduces the probability of claiming not to be enrolled because employed in the family firm or because waiting for a public competition. This suggests that instituting a new campus nearby when the potential demand for higher education experiences a decline induces mainly those with a low opportunity cost to enroll in university. Lack of significant effects in the labour market outcomes of those in the workforce, together with a significant reduction in unemployment in Northern regions, seem to be consistent with the hypothesis of the human capital model. However, as the flow of new enrollees does not significantly affect the workforce, the policy may generate too little variation in the workforce to distinguish between the human capital and the signalling theory.

The paper is related to two different strands of the literature. First, it speaks to the literature that analyzes the impact of the increasing supply of graduates on wages and overeducation level by providing a new focus on unskilled individuals' labour market outcomes (Chevalier & Lindley,

<sup>2</sup> Source: Eurostat statistics, Indicators of Youth. Statistics before 2000 are not provided.

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