

# What is the best age to enter the labor market in Brazil today?

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## Abstract

This study is an attempt to measure the effects of entering the Brazilian labor market at an early age on wages earned as an adult. In a previous study using a pooled data cross section (1988 and 1996), the conclusion was reached that the effect of entering the labor market at an early age is negative for those who begin to work early in life, but it becomes positive for those who start working between the age of 12 and 14. We used a pooled data cross section (2001–2009 and 2011) and found evidence that this age is much higher today, meaning that earnings continue to grow as people enter the labor market after the age of 14. We also found a threshold effect in returns to education with a magnitude that increases as people enter the labor market at older ages.

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## Resumo

Este estudo é uma tentativa de medir os efeitos da entrada precoce no mercado de trabalho brasileiro nos salários na fase adulta da vida. Um estudo anterior feito com dados empilhados (1988 e 1996) concluiu que o efeito da idade de ingresso no mercado de trabalho é negativo para quem começa a trabalhar muito cedo, mas torna-se positivo para quem começa a trabalhar com idade entre 12 e 14 anos. Usamos dados empilhados (2001–2009 e 2011) e encontramos evidências de que atualmente essa idade é bem maior, ou seja, que os rendimentos continuam a crescer com a postergação do ingresso no mercado de trabalho além dos 14 anos. Encontramos também um efeito limiar nos retornos em escolaridade, cuja magnitude cresce à medida que a entrada no mercado de trabalho é postergada.

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## 1. Introduction

It is plausible that working at an early age has a strong negative impact on future individual earnings and, consequently, on national income. This hypothesis seems to be widely accepted by academics and policymakers. However, there is little empirical evidence supporting it. There is extensive literature on the causes of child labor. However, according to [Kassouf \(2007\)](#) and [Emerson and Souza \(2011\)](#), only a few studies have been carried out on its hazards. According to the literature, the main ones are on its negative impacts on health (see [Kassouf et al., 2001](#); [Odonnell et al., 2004](#)) and education (see [Heady, 2003](#)), both of which are determinants of human capital and have a positive effect on labor earnings in adult life (henceforth earnings).

Taking the [Yoram \(1967\)](#) model seriously, both level of schooling and entry age in the labor market are endogenously and simultaneously decided. In order to claim causality from child labor to adult earnings, some treatment must be applied. Unfortunately, relevant and valid instrumental variables in order to control for the potential endogeneity of the level of schooling and age started to work in the earnings equations are seldom available in the databases commonly used in empirical studies of the consequences of child labor.

[Emerson and Souza \(2011\)](#) estimated a model using instrumental variables to obtain more robust estimates than those previously obtained by [Emerson and Souza \(2003\)](#) and [Ilahi et al. \(2001\)](#). It should be noted that a set of instrumental variables that do not vary among individuals, only among Brazilian states, were used. Moreover, since information about the age at which the individuals started to work and about their family background is available only for heads of families or spouses, the sample used by the authors excludes all other individuals with a different status in the family. In sum, due to the specificities of the data set used by the authors to build the instruments used in the estimations, it is hardly possible to apply the same kind of econometric modeling to come up with more evidences about the harms of child labor today.

In sum, [Emerson and Souza \(2011\)](#) concluded that child labor is associated with lower adult earnings. Specifically, they observed a quadratic relationship between the age at which an individual started working and his or her earnings in adult life. The impact of entering the labor market is negative for young children (in the sample used) and that negative effects turn positive between 12 and 14 years old. Although a plausible explanation was given by the authors for the maximum point of earnings and the age at which one began to work, in our opinion the estimated maximum point is significantly low even taking into account that child labor occurred several decades before. The authors suggest that the results found may be relevant to other countries with economies structurally similar to the Brazilian one in the 1950s, 1960s, and 1970s. They also claim that in Brazil today it might be better to delay the age at which one starts to work, considering that the environment changed quite significantly. In this context, an important social and economic question emerges: what is the best age to enter the Brazilian labor market today?

Our study is an attempt to measure the negative effects of child labor on earnings in adult life for individuals who, regardless of having worked as a child or not, managed to complete the two most important levels of education: high school and university. For this we select two restricted samples. One is a sample of individuals aged 23–65 years old with high school education completed only. Another is a sample of 23–65 year old individuals with higher education only. Clearly, conditioning in one (endogenous) variable and running a regression of the other variable on earnings does not solve the endogeneity problem.

The central idea of using two restricted samples is that, regardless of any difficulties caused by working as a child or youth, all the individuals included in the samples managed to complete at least one or two levels of education, as other individuals with the same level of schooling who did not work at an early age did. Our expectation is that individuals with the same level of schooling will have, on average, different earnings according to the age at which they entered the labor market. Among other reasons, this is a result of differences in the quality of their education and shortcomings in the learning process of those who, for instance, had to work during the day and study in the evening or vice versa. However, both aspects are reflected on the type of work one does as an adult.

We found evidence suggesting that not controlling for the number of hours worked might yield a downward bias in the estimate of the maximum point for the age at which one started to work. We found that the effect of the age at which one begins to work on labor income remains negative much beyond the age of 14 found by [Emerson and Souza \(2011\)](#). This issue and others will be discussed in greater detail in Section 4.

We also found evidence that, for people with the same level of schooling, the age at which they got their first job had an effect on their earnings. At this point, another question emerges: are the returns to education for adults equal for those who started working at different ages? As an attempt to find evidence in support of an appropriate answer

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