

The replacement of payroll tax by a tax on revenues: A study of sectorial impacts on the Brazilian economy

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Received 30 December 2013; received in revised form 30 January 2015; accepted 8 February 2015

Available online 4 March 2015

Abstract

A topic of current research in discussion about the Brazilian economy is the exemption from payroll taxes, which aims to stimulate competitiveness of the firms, boosting economic growth. This topic was introduced in Brazil by new laws that proposed replacing the payroll tax with a new tax on revenues. The payroll tax rate of 20% was replaced by a tax rate of 1% or 2% on revenue. This change has been applied primarily in labor-intensive economic sectors. In this paper, a neoclassical model was used to evaluate some sectorial impacts of these tax changes. The results show positive effects of this reform, among them, the increase in aggregate consumption and capital stock. Employment also grows in the labor-intensive sector. However, under a government revenue neutral scenario, these effects are almost completely lost, which shows some evidence about the low efficiency of these reforms.

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JEL classification: C61; C68; E62

Keywords: Neoclassical models; Tax reforms; Payroll tax exemption

Resumo

Um tema em recente no âmbito da economia brasileira é a desoneração da folha de pagamentos, a qual objetiva estimular a competitividade das firmas, em direção ao crescimento econômico. Este tópico foi introduzido no Brasil por meio de medidas provisórias as quais propunham substituir a alíquota previdenciária patronal incidente sobre a folha de pagamentos por uma nova alíquota incidente sobre o faturamento. A alíquota patronal de 20% foi substituída por uma alíquota de 1% ou 2% sobre o faturamento. Esta mudança sendo feita primeiramente em setores econômicos intensivos em mão de obra. Neste artigo, um modelo neoclássico foi utilizado para avaliar alguns impactos setoriais advindos dessas mudanças. Os resultados evidenciam efeitos positivos dessa reforma, entre eles, crescimento do consumo agregado, e estoque de capital. O emprego também cresce no setor intensivo em

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Peer review under responsibility of National Association of Postgraduate Centers in Economics, ANPEC.

trabalho. Entretanto, sob um cenário neutro de arrecadação, esses efeitos são praticamente nulos, o que mostra alguma evidência acerca da baixa eficiência dessas reformas.

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Palavras chave: Modelos neoclássicos; Reformas tributárias; Desoneração da folha de pagamentos

1. Introduction

In August 2011 the Brazilian government proposed a set of programs and economic actions to seek productivity growth and competitiveness of the economy.¹ One of the first measures was a tax modification that replaced the payroll tax of labor-intensive firms by a tax on their revenues. The payroll tax rate of 20% was replaced by a tax rate of 1% or 2% of revenues of the benefited sectors. By the beginning of 2014, this measure has already included 56 sectors of the Brazilian economy².

The rate of 1% applies on revenues of industrial sectors, whereas for services³ the tax rate is 2%. This change was not revenue neutral. In fact, the Secretariat of Federal Revenue of Brazil (RFB) estimates the revenue loss at 0.02% of GDP.

In this paper we carried out some simulations to study the macroeconomic effects of this tax reform. We built a neoclassical model with a representative household, two intermediate firms – one labor-intensive and other capital-intensive – and a unique final good firm. Four scenarios were considered in the analysis: the first reform (referred to **reform 1**) replaces the payroll tax rate by a tax rate of 1% on revenue of the labor-intensive firm; the second reform (**reform 2**) considers a tax rate of 2% on revenue of the labor-intensive firms; the third simulation (**reform 3**) replaces the payroll tax rate by a tax (on revenue) which is government revenue neutral, and finally, the fourth tax change (**reform 4**) uses a payroll tax rate which implies the same level of government revenues losses of the first reform in the long term. Our model was based in Paes (2011, 2012).

The rest of this paper proceeds as follows. In Section 2, we review the applied literature, while in Section 3, we describe the macroeconomic model used in this study. Section 4 contains the description of the model calibration and in Section 5, we discuss the results. Finally, in Section 6 we present the conclusions of this research.

2. A review of literature

There are many works that analyze the economic effects associated with tax changes. Studies based on dynamic general equilibrium models have been quite prevalent. As an initial reference, Fullerton (1982) used a neoclassical model to study the impacts of several tax reforms on the U.S. economy. Auerbach and Kotlikoff (1987) constructed an overlapping generation (OLG) model to analyze how changes in fiscal policies affect the American economy. In this paper, the authors evaluated some economic impacts of changes in the tax rates on income, wages, and consumption.

Lucas (1990) studied the impacts of shifting capital income taxation to labor income taxation. Following a neoclassical perspective, Cooley and Hansen (1992) analyzed the economic effects of some tax changes that combine different rates for capital and labor income taxes. The results suggest that the welfare costs are strictly lower in economies that replace taxation on capital by other less distortive taxes such as consumption taxes.

Prescott (2002) looks at the tax burden and the trade-off between consumption and leisure. In his study, he compares the productivity per worker in the USA and France, concluding that the differences between consumption taxes and labor taxes have a big impact on productivity per worker in these countries.

¹ MIDC (Ministério do Desenvolvimento and Indústria e Comércio Exterior, 2011).

² For example, auto parts, poultry, machinery and equipment, toys, call center, ceramics, retail trade, manufacturing, construction, footwear, design house, railway equipment, medical and dental equipment, aircraft, ships, buses, pharmacies and medicines, stoves, hotels, optical instruments, electrical equipment, furniture, pulp and paper, stones and ornamental rocks, plastic, tires, textiles, and information technology.

³ Computer services, call center, design houses, hotels, public road transport, construction of infrastructure, maintenance of machinery and equipment, support services to the defense industry, engineering and architecture, technical support in computer.

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