

Chapter 36

Taxes, Natural Resource Endowment, and the Supply of Labor: New Evidence

Weshah Razzak

Arab Planning Institute, Kuwait

Belkacem Laabas

Arab Planning Institute, Kuwait

ABSTRACT

We use the work-leisure choice model to compute equilibrium weekly hours worked for a number of Arab countries and compare them to the G7 countries. We show that the labor supply curve is elastic in all Arab countries, and provide a new measure of labor productivity. This finding confirms previous research that workers respond to incentives, which has serious implications for tax and social security policies. We also provide some policy simulations pertinent to the effects of taxation on welfare and poverty.

INTRODUCTION

The purpose of this chapter is to measure hours worked, which allows us to compute the Frisch elasticity of labor supply, and labor productivity in a number of Arab countries for which no data have been published previously. The Frisch elasticity captures the elasticity of hours worked to the wage rate, given a constant marginal utility of wealth. Labor productivity is Gross Domestic Product (GDP) per hours worked. We use the model to study the macroeconomic implications of some policy issues, such as the effect of taxes on welfare and poverty.

DOI: 10.4018/978-1-7998-1207-4.ch036

To measure weekly hours-worked, we calibrate a theoretical model; namely, the work-leisure choice model which Nickell (2003), Prescott (2004) and Shimer (2009) demonstrated its Goodness-of-Fit to G7 data.¹ We use this model because the data of the main predicting factors (such as consumption, income, the tax rate and the share of capital) are available for the Arab countries.

Our sample for the Arab countries includes two groups of countries: oil-producing and non-oil-producing nations. The former do not tax income and consumption. However, the average effective marginal tax rate crucially determines the solution of the work-leisure choice model (i.e., the supply of labor). To contend with this problem, we introduce natural resource endowment in the production function of the oil-producing countries. The inclusion of natural resources in the model creates a wedge between real wages and the marginal product of labor similar to the *wedge* that taxes create. The increase in the share of natural resource reduces hours worked. It discourages work and reduces labor supply. This is because the wage rate in the oil-producing countries exceeds the equilibrium wage rate due to rent.

We make a number of contributions. First, we measure equilibrium hours worked for five Arab non-oil producers (Egypt, Jordan, Morocco, Syria, and Tunisia) and for seven oil-producers. These include Algeria and the Gulf Cooperation Council countries (GCC) which are Bahrain, Kuwait, Oman, Qatar, the United Arab Emirates (UAE) and the Kingdom of Saudi Arabia (KSA) for which the data on hours worked do not exist. Estimation of hours worked allows us to compute and analyze the Frisch elasticity of the labor supply, which has a major role in policy design. In addition, it allows us to measure productivity as GDP per hours worked in the Arab countries. Second, we are unaware of any published articles on the work-leisure model with a natural resource endowment.

We modify the model and show that such endowment works just like a tax on labor supply. Third, a theory is valid if it fits different data at different times and places. So far, the bulk of the evidence for the work-leisure model relies on data from developed countries (the G-7 and the OECD). We confirm the validity of the work-leisure, intertemporal-intratemporal substitution model using data from the Arab countries. We show that Arab countries' labor supply curves are just like the G-7 (also elastic), which has important policy implications.^{1F2} People in non-oil-producing Arab countries work long hours, but their relative productivities are low; therefore, they are relatively poorer. People in oil-producing countries work much less, which is consistent with Noland and Pack (2007), among others, who show that fewer individuals are involved in the production and creation of wealth. Fourth, we solve the model stochastically and produce baseline projections of future labor supply for the Arab countries. Then we conduct policy scenarios. For the GCC oil-producing countries, we ask how much welfare will change if they embark on a policy to diversify their income (i.e., reduce the reliance on oil as the main source of income). We find very significant increases in the lifetime consumption equivalent, which is our measure of welfare. We also ask how much welfare will change because of the introduction of a permanent consumption tax.

Finally, we choose Morocco, a non-oil-producing country that has a high poverty rate, and ask how long it will take to eliminate poverty if the government reduces the effective marginal tax rate on households. We find that a small, permanent tax cut can reduce poverty by more than half in approximately 12 years.

Section 2 summarizes the main features of the Arab economies which have implications for the estimation of hours worked. We present the model in section 3. In section 4, we calibrate the model for the G-7 countries and the Arab countries, estimate hours worked, compute the elasticity of labor supply, and labor productivity. Section 5 includes policy simulations, and Section 6 is the conclusion.

21 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/taxes-natural-resource-endowment-and-the-supply-of-labor/241092

Related Content

New Welfare Economy

(2021). *Applied Doughnut Economics and Neuroeconomic Psychology for Business and Politics* (pp. 90-119).

www.irma-international.org/chapter/new-welfare-economy/277701

Classification and Management of Commercial Vehicle Production

Jiang Zhi (2021). *International Journal of Circular Economy and Waste Management* (pp. 16-19).

www.irma-international.org/article/classification-and-management-of-commercial-vehicle-production/281609

The Waste Cascade in Dell Reconnect With a Focus on Plastic Packaging

Pietro De Giovanni (2022). *Cases on Circular Economy in Practice* (pp. 208-237).

www.irma-international.org/chapter/the-waste-cascade-in-dell-reconnect-with-a-focus-on-plastic-packaging/312042

Lack of Environmental Policy and Water Governance: An Alarming Situation in Pakistan

Laeq Janjua, Atteeq Razzak and Azeem Razzak (2021). *International Journal of Circular Economy and Waste Management* (pp. 29-40).

www.irma-international.org/article/lack-of-environmental-policy-and-water-governance/281611

Profile of Top Companies Compared to the Most Valued Companies for Professional Performance in Spain

Francisco J. Ferreiro Seoane (2019). *Global Campaigning Initiatives for Socio-Economic Development* (pp. 33-50).

www.irma-international.org/chapter/profile-of-top-companies-compared-to-the-most-valued-companies-for-professional-performance-in-spain/227871