

# Impact of taxes on structural unemployment



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This paper analyzes the impact of taxes on structural unemployment using a regression model for the Pakistan. It was found that the unemployment and welfare effects of taxes differ considerably among Pakistan. The magnitude of these effects rise in particular in the broadness of the tax base of a country and the strength of international spillover effects through foreign direct investment.

In this research taxes were further divided into two different variables i. e. direct taxes and indirect taxes to inspect impact of taxes on unemployment rate in Pakistan, 30 years data gathered on yearly basis from 1978 – 2008 direct taxes as share of GDP and indirect taxes as a share of GDP and unemployment rate was collected, the study applied regression model as a statistical tool for data analysis. Overall the results show that an increase in taxes significantly impact the unemployment in Pakistan although the effect of corporate taxes on unemployment were smaller than the effect of labor and value added taxes.

## **Chapter 1**

### **Introduction**

It was usually known that taxation was an important part in explaining differences in unemployment rates across countries (Nickell, 1997). Since high unemployment rates had lead to increase government expenditures and taxes the question was whether the impact of the tax burden on unemployment has been predictable correctly-that was whether the estimates were steady and impartial (Heitger, Bernhard, 2002).

There were numerous studies carried out to identify the impact of taxes on unemployment. Nearly all studies reported different findings; some reported that a higher unemployment rate had also led to a higher tax rate (Pindyck, and Rubinfeld, 1998), whereas others identified that taxation was an important factor in that explains the differences in unemployment rates transversely in different countries (Nickell, 1997), another study shows that the relation between long-term unemployment and taxation could be equally reinforcing which means that long term unemployment seems to be accompanied by higher government expenditures which in turn had led to a higher total tax rate (Heitger, 2002).

The problem identified in the study was whether the acknowledged variables had an impact on the unemployment and which of the variables has the most impact on unemployment. To highlight the problem two hypotheses had been constructed. Both hypotheses elucidate the impact of each variable on unemployment.

30 years of secondary data from year 1979-2009 has been gathered from the source of “ Federal Board of Revenue Pakistan” and “ Pakistan Economic survey” and finance. gov. pk. The econometric tool used to analyze the hypothesis was regression model since there were two independent variables and one dependent variable. Direct taxes and indirect taxes were the independent variables and unemployment rate was the dependent variable. Following chapters show the findings of hypothesis analysis.

The research has some restrictions such as there had been a change in the government policy of any of the several direct or indirect taxes and had

raise/trim down the percentage of direct or indirect tax collection which possibly changes the entire circumstances while a change in the unemployment rate had possibly also change the state of affairs. While on the contrary merely 30 years data for both independent (Direct taxes and Indirect taxes) Variable and dependent (Unemployment rate) Variable obtained and due to time constraints this research was not done on broad scale.

## **Hypothesis**

H1: Direct Taxes had a significant impact on Unemployment Rate

H2: Indirect Taxes had a significant impact on Unemployment Rate

## **Outline of the Study**

Heitger, (2002) suggest that whether taxes were exogenous or endogenous it appears to depend on the fundamental significance level. But if level of 95 percent was applied on total tax rate then must be measured as exogenous with respect to the total unemployment rate. Thus the original estimation seems to be impartial and reliable. However in short-term and long-term unemployment rates things could be different. One had anticipated that in the case of long-term unemployment rate a simultaneity problem exists. The reason was that higher government expenditures and long-term unemployment seems to leads towards a higher total tax rate. Thus the relationship between long-term unemployment and taxation had possibly been equally reinforcing.

Nickell, Nunziata, and Ochel, (2005) in his GLS panel regressions establish the following effect for institutions: Employment protection and employment

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taxes had a positive effect on unemployment. The impact of taxes however was fairly small and countries with high bargaining coordination reverse this positive effect. Employment protection primarily has an impact on unemployment persistence. The benefit replacement rate has an important positive effect on unemployment and magnifies through the interaction with benefit duration. There was no significant influence of union density on unemployment; however positive changes in union density were associated with higher unemployment. One interpretation was that increasing union pressure drives up wages and has hence negative effects on employment. When union density stabilizes this effect seems to die away. Finally find a positive effect of owner occupation on unemployment however this effect was not very significant.

Daveri, and Tabellini (2000) analyze the effect of labor taxes on unemployment and find strong correlations. In particular in countries with high unionization the effect of higher labor taxes on labor costs and hence on unemployment was stronger.

Disney, (2000) finds that direct taxes on labors only affect employment and unemployment if either labor supply was inelastic or labor markets were not competitive and union-employer bargaining was not coordinated. Empirical findings suggest that the labor supply response to tax changes of a regular full-time worker was probably inelastic. There was also evidence that in general workers cannot pass on tax changes since direct tax “wedges” correlate negatively with labor shares. Moreover wage setting arrangements should be based on wages net of all taxes borne by workers including consumption taxes. Poorly designed tax and welfare benefit structures

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therefore had significant effects on employment and unemployment in the aggregate. A task for future research was to integrate these common behavioral responses to high effective marginal tax rates in a variety of settings into a macroeconomic model of the labor market and of the economy as a whole.

## **Definition of Terms**

### **Direct Taxes**

A direct tax is a form of tax which is collected directly by the government from the persons who bear the tax load. Taxable individuals file tax returns directly to the government. Examples of direct taxes are corporate taxes, income taxes, and transfer taxes.

### **Indirect Taxes**

**An indirect tax is a form of tax which is collected by the intermediaries who transmit the taxes to the government, and also execute the functions associated with filing tax returns. The customers bear the final tax load. Examples of indirect taxes are sales tax and value added tax (VAT).**

### **Unemployment Rate**

An economic condition marked by the fact that individuals actively seeking jobs remain un-hired. Unemployment was expressed as a percentage of the total available work force. The level of unemployment varies with economic conditions and other circumstances.

### **Grows Domestic Products**

The value of a country's overall output of goods and services (typically during one fiscal year) at market prices excluding net income from

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abroad. GDP can be estimated in three ways which in theory should yield identical figures. It was (1) Expenditure basis: how much money spent (2) Output basis: how many goods and services were sold and (3) Income basis: how much income (profit) was earned. These estimates published quarterly were constantly revised to approach greater accuracy. The most closely watched data was the period to period change in output and consumption in real (inflation adjusted) terms. If indirect taxes were deducted from the market prices and subsidies were added it was called GDP at factor cost or national dividend. If depreciation of the national capital stock was deducted from the GDP it was called net domestic product. If income from abroad was added it was called gross national product (GNP). The main criticisms of GDP as a realistic guide to a nation's well being was that (1) it was preoccupied with indiscriminate production and consumption and (2) it includes the cost of damage caused by pollution as a positive factor in its calculations while excluding the lost value of depleted natural resources and unpaid costs of environmental harm. Called also gross value added (GVA).

## **Unemployment Rate in Pakistan**

### **Year**

### **Unemployment rate**

2003

7.80%

2004

7. 70%

2005

8. 30%

2006

6. 60%

2007

6. 50%

2008

5. 60%

2009

7. 40%

2010

15. 20%

([www.indexmundi.com/pakistan/unemployment\\_rate.html](http://www.indexmundi.com/pakistan/unemployment_rate.html))

Chapter 2 presents the relation between unemployment rate and taxes.

Chapter 3 presents the theoretical framework along with hypotheses that had been described to explain unemployment rate in Pakistan. In Chapter 4 illustrate the empirical methodology and statically tool that has been used.

Chapter 5 presents the table assessment table followed by the results and

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findings in chapter 6. In Chapter 7 presents the conclusion and draws out the implications.

## **Chapter 2**

### **Literature Review**

Few studies had examined the exact theoretical relationship between economic growth and the unemployment rate and how this was affected by the tax “wedge” and the existence of an unemployment benefit system. In general growing productivity can wipe out jobs and create higher unemployment (Aghion, and Howitt, 1994), but also raise vacancies and the outflow from unemployment (Pissarides, 1990) and affect the rate of creating new job slots (Bean, and Pissarides, 1993). Clearly tax and welfare policies can impose on all these mechanisms by affecting the inflows to and period of unemployment spells. Moreover if there was any “time dependence” in unemployment spells supply or demand shocks that raise unemployment had change the duration structure of the stock of unemployed and thereby change the level of wage pressure and thus the possible balance level of economic activity (Layard, Nickell, and Jackman, 1991).

Gottschalk (1988) the theoretical relations between taxes and transfers and the period of unemployment had however received much less attention. It had been known that lower guarantees lessen the labor supply of working recipients but Gottschalk do not had an exact theoretical framework in which to analyze the impact of lower guarantees on the probability that a nonworking recipient should accept a job. Since the public had care more about shortening the duration of unemployment of transfer recipients who

was not working than in raising the labor supply of those who were working there was an analytical gap to be filled.

The framework presented by Gottschalk (1988) was also relevant to the empirical literature on welfare dynamics. Existing practical studies had either lacked a formal behavioral model or had been based on static work-leisure models. Blau, and Robins (1986) offer a simply statistical model of a stochastic method generating transitions off of welfare. Plotnick (1983) describes transitions but uses a static work-leisure framework while (Plant, 1984) introduces stochastic shocks into a similar static model. Only studies of unemployment insurance (UI) had used an explicit search framework to explain dynamics. The Plant (1984) shows that however that the analytical conclusion these studies reach (that higher benefits increase search duration) was a special case of a more general model.

In this study Plant (1984) wants to explore the impact of changes in the parameters of a transfer system on the costs and benefits of search and hence on the probability of accepting a job. Rather than focusing on a specific program he considers a generic tax-transfer system characterized by a guarantee (the benefit to someone not working) and a tax rate (the rate at which benefits were reduced or taxes increased as earnings rise).

In reality commentators point to the very high level of public safety measures faced by employer's in many European countries (over 40 per cent in Belgium, France and Italy for example) as being critical to the allegedly poor state of the European labor market including its high unemployment. However if to take a quick look at Denmark – where employers pay no social

security contributions non-wage labor costs were negligible and unemployment was around the EU average – quickly reveals the weakness of this view. Nickell, and Bell (1996) see that average unit labor costs (i. e. labor costs incurred in producing \$10 of value-added) in 13 OECD countries where it has rip these into wage costs and payroll taxes. The result clearly shows that there was no significant relationship between unit labor costs and payroll tax rates the slope of a regression of the former on the latter being a mere 14 cents for every 10 percentage points of tax with a t statistic of 0. 5. The reason was that in the long run payroll taxes tend to be shifted onto employees.

The basic idea at the back of cutting payroll taxes or providing job subsidies for the unskilled was to raise the demand for unskilled labor. Potentially it lessens the unskilled unemployment raise unskilled take-home pay and contributes towards an overall lessening in unemployment. If this can be achieved it was good on competence grounds and in addition it was good on social grounds. There were strong social reasons for raising both living standards and employment opportunities among the unskilled in a world where for example one quarter of prime age men in this category was currently not working compared with around 5 per cent a mere 20 years ago. The social problems exacerbated by this level of non-employment were many and very costly so it provides an independent reason for trying to generate more unskilled jobs.

Daveri, and Tabellini (2000) observed negative relation between long run growth and unemployment was at odds with the economist's public opinion that the normal rate of unemployment was invariant to efficiency growth.

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Table 2. 1, Unemployment and growth in the long run: Europe and the US

1960-70

1971-80

1981-90

1991-8

Unemployment

EU

2.5

3.7

8.2

9.9

USA

4.8

6.4

7.1

5.8

Growth

EU

4. 4

2. 7

2. 3

1. 7

USA

2. 6

1. 8

1. 7

1. 8

(Notes: Unemployment was the OECD standardized unemployment rate; Growth was the growth rate of real per-capita GDP; all in percentage points. Source: OECD National Accounts and Economic Outlook.)

Figure 2. 1, Unemployment and growth in the long run: Europe and the US

(Notes: Unemployment was the OECD standardized unemployment rate; Growth was the growth rate of real per-capita GDP; all in percentage points. Source: OECD National Accounts and Economic Outlook.)

In fact not only do non-wage labor costs tend to be borne by employees but so do income taxes and excise taxes. So shifting the tax load from one type

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of tax to another was not going to had much impact on employment in the long run as the cross-section evidence reported in OECD indicates. The only possible major effect arises from the fact that income taxes and excise taxes be apt to fall on non-labor income as well as labor income whereas payroll taxes fall only on the latter. Nickell, and Bell (1996) Thus a shift from one tax to another changes the ratio of post-tax non-labor income to post-tax labor income thereby changing work incentives and hence unemployment. in addition switching from payroll taxes to income taxes say was a very complicated way of changing the effective tax rate on non-labor income given that it can be adjusted independently without any difficulty.

If government tries to attempt to generate any significant reduction in unemployment rate by cutting across-the-board tax rates on employment was likely to fail. This had been effective only in short run real wage resistance and some effects because benefits were subject to income taxes not payroll taxes.

Pissarides (1985) consider only positive aspects of taxation in his paper though it was not hard to find reasons for welfare-improving taxation in markets where the distribution of jobs takes place through search. Three kinds of transfer were considered both when there was outside financing and when the schemes were self-financing Lump-sum employment subsidies unemployment benefits and relative wage taxes. He also considers an application to a policy that has been advocated recently both in the U. S and in Britain for taxing small wage increases and using the revenue to back employment. He demonstrate that if inflation perfectly anticipated the policy was identical to one where comparative taxes on real wages were used to

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finance employment subsidies though if the tax instruments were not changed in response to inflation the policy introduces a link between expected inflation and equilibrium unemployment.

In general any policy that reduces profits raises unemployment. Thus employment subsidies reduce unemployment and unemployment benefits raise it. Taxes also raise unemployment despite of whether it was on the real wage or on nominal wage inflation. But if the revenue from the tax was used to finance employment subsidy unemployment falls because the transfer effect of the subsidies offset that of the tax leaving only the minor effect from the tax on the sharing rule. The latter tilts the balance in favors of profits.

European labor costs had increased for many reasons one of which was particularly easy to recognize: higher taxes on labor. As shown in Table 1 and figure 1 labor taxes had gone up in almost every country and in almost each decade. But the consequences of labor taxes were not the same everywhere. It depends on the wage setting institutions. If labor markets were competitive the flexibility of individual labor supply was low and the load of a tax on labor income was bear almost completely by the worker with modest effect on unemployment and the capital-labor ratio.

Table 2. 2, Effective tax rates on labor incomes

Country/Year

1965-70

1971-5

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1976-80

1981-5

1986-91

1991-5

Australia

11. 7

14. 1

16. 5

17. 9

18. 6

20. 1

Belgium

30. 5

36. 4

41. 7

45. 3

48

47.3

Canada

17.1

22

22.6

25

28.7

31.9

Finland

20.7

28.1

30.9

31.1

34

36

France

33.9

33

37.9

42.4

45.5

48.5

Germany

30.5

35.1

38.3

38.9

41

42

Italy

26.1

28.7

32

37

41. 1

45. 4

Japan

16

18. 1

20. 6

24. 4

27. 2

27. 7

Netherlands

36. 1

42. 7

47. 1

50. 1

51. 6

52. 6

Norway

31

38.9

38.7

38.4

39.6

39

Spain

15.4

20.2

26.4

32.8

35.6

33

Sweden

34.3

38.9

47.2

48. 1

51. 5

50. 1

UK

22. 6

24. 7

26. 7

27. 1

25. 9

24. 4

USA

20. 1

23

26. 1

28. 3

28. 8

27. 4

(Notes: Effective tax rates were constructed following the methodology suggested by Mendoza et al. (1994). Source: OECD National Accounts and Revenue Statistics)

Daveri, Tabellini, Bentolila, and Huizinga (2000) consider if labor markets were non-competitive; an exogenous and lasting increase in labor costs has two effects. On the one hand it reduces labor demand and therefore creates unemployment. On the other hand, as firms replace capital for labor the minor product of capital falls. Over long periods of time this in turn diminishes the encouragement to invest and thus to grow. Then high unemployment was associated with slow growth and lower investment. There was nothing neither very profound nor very surprising in these arguments. Yet sometimes the simplest explanations were also the best explanations.

Figure 2. 2, Effective tax rates on labor incomes

(Notes: Effective tax rates were constructed following the methodology suggested by Mendoza et al. (1994). Source: OECD National Accounts and Revenue Statistics)

As reported by Blanchard , and Katz (1997), the role of taxes was a main focus of a multi-country study organized by Layard, and Nickell in the mid-1980s. The cross-sectional verification within Europe does not reveal much correlation between tax rates and unemployment rates nor between changes in tax rates and changes in unemployment. The study done by (Daveri, et al 2000) confirms these previous findings in the cross-section of 14 OECD countries. The cross-sectional variation in the unemployment rates was <https://assignbuster.com/impact-of-taxes-on-structural-unemployment/>

dominated by fixed effects at the country level. This was not too amazing: as documented for instance by Nickell, (1997), labor market legislation differs markedly across countries but has not changed much since the late 1960s or early 1970s. Labor tax changes considerably forecast changes in unemployment rates over time nevertheless. Moreover this correlation was strong and evident among the highly unionized countries of Continental Europe and much less so in countries with competitive labor markets or in the Nordic countries characterized by highly centralized trade unions. Thus the correlation between labor taxes and unemployment was only captured by simultaneously exploiting the time series and cross-country variations of the data and by distinguishing among countries on the basis of their labor market institutions. This distinction as well as the emphasis on time series (as opposed to cross-country) correlation was missing in most previous studies on European unemployment.

Daveri, et al (2000) obtain evidence of a highly important and very large outcome of labor taxes on the unemployment rate for countries in continental Europe. The estimated coefficient of labor taxes on unemployment ranges from about 0.3 to over 0.5 depending on the specification. The not as much of economical specification which was perhaps more sensible yields an estimate of 0.30 – 0.35. The Daveri, et al (2000) obtains this result using five-year averaged data for a sample of 14 OECD countries. Two recent papers by Nickell, and Layard (1999) and Blanchard, and Wolfers (1999) implement a similar empirical strategy with small panels and five-year averaged data. It was thus natural to ask whether results significantly differ across studies and why.

The empirical work closest to Daveri, et al (2000) was the one conducted by Nickell and Layard (1997). Daveri, et al (2000) regress (the log of) the unemployment rate on a variety of controls including proxies for macroeconomic policy stance labor market institutions total tax rates and time dummies. Their estimated tax coefficient was about 0.22 smaller than (Daveri, et al 2000) but in the same ballpark.

Daveri, et al (2000) use power functions so their estimated coefficient of 0.027 must be multiplied by the average unemployment rate in the sample 7.9%. The reasons for this discrepancy were many: number of countries time period definition of taxes and regression specification. But the important reason was that NL constrains the estimated coefficient on labor taxes to be the same for all the countries in the sample. As shown in Figures 1-3 (Daveri, et al (2000) find evidence of substantial heterogeneity across groups of countries. In fact when it was imposing the (rejected) constraint that all countries had the same coefficients (Daveri, et al (2000) too obtain a smaller estimate like NL.

Figure 2. 3, Unemployment and labor taxes in continental Europe

Figure 2. 4, Unemployment and labor taxes in the Anglo-Saxon

Figure 2. 5, Unemployment and labor taxes in the Nordic countries

A much smaller coefficient of 0.018 was obtained by Blanchard and Wolfers (1999). Their sample size was 160 and their judgment method was non-linear least squares. This estimation method allows it to separately identify country- and period-specific unnoticed effects from those of experimental

shocks and institutions. There were two important differences between (Daveri, et al (2000) research and the results reported in Blanchard and Wolfers. First Blanchard, and Wolfers does not exploit the time variation that was in the data whereas (Daveri, el at (2000) finds in their research. Blanchard, and Wolfers measure tax rates as the 1960-96 average for each country and interact with it with time-specific dummy variables. As a result country-specific information on the time variation of tax rates was lost. Moreover like in NL and unlike here all countries were constrained to the same estimated coefficient on tax rates.

Our results on wages (in particular the evidence of forward shifting of taxation in continental Europe but not in the Anglo-Saxon countries were consistent with those of (Alesina, and Perotti 1997) find a positive relation between labor taxes and unit labor costs in manufacturing in a sample of annual data from 14 OECD countries. Alesin, and Perotti (1997) also grouped countries according to their labor market institutions and in particular according to the role of trade unions. Yet their country classification differs from ours in some cases for followed the qualitative classification suggested by Calmfors, and Driffill (1988) it had been relied directly on coverage and density data.

Other papers investigating the empirical evidence on wages unemployment and taxation with mixed results were Schioppa (1990), Tyrvainen (1995), and Tullio (1987). Bean (1994) and OECD (1994) survey this strand of literature.

Some of the ideas given by (Daveri, el at. 2000) in his paper were clearly related to Bruno, and Sachs (1985) and Phelps (1994). The theoretical

analysis in both books was not cast in terms of modern growth theory however. Daveri, et al (2000) had more ambitious goals and their analysis also focused on business cycle phenomena and on international linkages. The empirical analysis also differed from ours in the choice of economic variables and did not group countries according to labor market institutions.

The relation between unemployment and taxation has freshly involved amazing interest. For instance Nickell, (1997) has find that taxation was a vital factor in explaining differences in unemployment rates in different countries (see also Scarpetta 1996; Nickell and Layard, 1997; Heitger 1998; and Elmeskov, Martin, and Scarpetta, 1998). As high unemployment rates had direct to higher government expenditures and taxes here the question was whether the impact of the tax load on unemployment has been projected correctly-that was whether the projection were consistent and unprejudiced.

The relevant real wage facing the employer was the real wage at which the employee was eager to work. It was unrelated to the employee he argues as to whether this wage was higher (or lower) because of changes in the “wedge”-the direct tax on labor-or because of changes in taxes on utilization goods. The issue again was whether workers can shift taxes. Nickell (1997) believes that capital mobility rules out shifting in the long run and therefore concludes that the facts for any impact of direct labor taxes on unemployment rates was weak. Not surprisingly given the earlier quote (Daveri, and Tabellini 2000) clash this conclusion.

To estimate the “ exact” impact of taxation on unemployment Heitger (2002) uses Hausman, (1978) specification tests. With the help out of these tests it was Heitger expected to inspect whether the impact of the tax load on unemployment was exogenous or not.

**Unemployment rates in OECD countries fluctuate broadly (Table 2). Total unemployment rate in Spain in 1983-88 was 19.6 percent was the highest and Japan shows the lowest rate which was 2.7 percent. These two countries yet again reported the highest (18.9 percent in Spain) and the lowest (2.3 percent in Japan) unemployment rate. The average rate of total unemployment rate in OECD increased merely to some extent in 1983-88 from 7.8 percent to 8.0 percent in 1989-94.**