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Labor Tax and Relative Cost of R&D

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Abstract

This paper examines the impact of taxation of labor on investment in Research and Development. Given the central role of R&D as an engine of business expansion and economy growth, issue of estimating the barriers to R&D is a vital one, both from theoretical and practical point of view. We analyse the impact of labor taxation on decision to invest in R&D. We show that labor taxation changes relative costs of R&D investment versus fixed capital formation. It leads to allocation of investment more towards physical capital formation than R&D investment. In the empirical part of the paper, using panel and cross-section of countries, we shed light on the impact of taxation of labor on R&D. Our estimates indicate that labor tax has a significant adverse impact on R&D investment, and its negative impact is larger for R&D than for physical capital.

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1. Introduction

The main objective of our paper is to try to answer the question what is the impact of labor taxation on Research and Development investment. We analyze impact of taxes that business pay for labor. Labor tax is defined as all related taxes payable by employee that are proportional to payroll or number of employees. R.Solow (1957) showed that the development of technology actually entails economic development. He analyzed the reasons of labor productivity growth that has occurred in the U.S. between 1909 and 1949, and proved that 7/8 increase in productivity was due to ”the wider technological progress”, and only in the one eighth from increased capital expenditures. At micro level, Research & Development spending (hereafter R&D)is considered as a key factor in determining the firm capabilities to create technological progress, i.e innovations. A look at the determinants of investment in R&D also has practical implications. Level of investment in R&D is considered unsatisfactory low in majority of advanced countries. For example, majority of European countries were substantially short of the 3% target of the Lisbon Strategy for 2010, even despite higher growth rates in decade of 2000's than in 90's. No surprise that the issue of R&D spending gains attention from policy makers. From the perspective of policy, one would need to measure the impact of specific structural policies on R&D to make proper diagnosis of underinvestment problem. The studies conducted so far for (Hall 1996,Griliches 1997, Jones and Williams 1998) showed also that the rate of return on investment in R&D is very high, much higher than the rate of return of capital investment. Jones and Williamson (1998), specifically found that along a balanced growth path the social rate of return exceed the static marginal productivity of R&D by a factor of 2 to 4. These considerations do not only apply to high income countries which are on the technological frontier. As Griffith, Redding and Van Reenen (2005) showed - countries that rely on technology transfer instead of

their own innovation may nonetheless require domestic R&D capacity to enable the successful adoption and integration of foreign technologies. Why, then, in some countries the level of investment in R&D is so low?

2. Literature Background

There is extended literature on effects of labor taxation such as personal income taxes and employers and employees social security contributions on labor utilization (OECD 2008). There is wide consensus that taxes on labor borne by employee and employers have adverse effects by affecting both labor supply and labor demand. High labor tax wedges reduces employment levels, especially in the case of imperfect labor markets where high legal minimum wages prevent labor taxes from being shifted onto (low-skilled) workers (OECD 2010). Due to recommendations from international organizations, some European countries have recently enacted tax reforms which included a tax shift from labor taxes to the consumption taxes, i.e VAT (Germany, Hungary, Czech Republic), also this kind of tax shift from labor taxes to the VAT, has been discussed in France, although this reform has not been implemented. Majority of literature on the effects of taxation on the investment decisions has focused on capital as a production factor. The impact of corporate taxes on investment is one of the most widely researched questions in both public finance and economic growth literature (see Robert J. Barro 1991; J. Bradford DeLong and Lawrence H. Summers 1991; and William J. Baumol, 2007). Since Dale W. Jorgenson (1963) and R.Hall and D.Jorgenson (1967), many public finance economists have addressed this topic. One of the most comprehensive in terms of country comparison is study by Schleifer, Djankov, Ganser, McLiesh and Ramalho (2010). Having used new data set for large group of countries, they found that a 10% increase in the annual effective rate of corporate taxation reduces the ratio of aggregate investment to GDP by 2% (average is 21%)

and the number of new firms by 1.4% (average 8%). Lee Y. and Gordon R.H. (2005) found that statutory corporate tax rates are significantly negatively correlated with cross-sectional differences in average economic growth rates. Their estimations shows that cut in the corporate tax rate by 10 percentage points raises the annual growth rate by one to two percentage points. However, most of these studies were focused on corporate taxes and capital income taxation effects on capital formation or investment decision. There are no, however, paper which study the effect of labor tax rates on R&D spending. An exception is Elschner et al. (2006) who look at the effective tax burden on both capital and highly skilled labor and study the different tax policy strategies applied by different countries and Hajkova et al. (2006) who found that the impact on FDI from labor taxes is generally substantially larger than that of cross-border effective corporate tax rates. This can hinder technology transfer and spillover of best practices from multinationals to domestic firms, thereby reducing productivity. Given these findings we analyse the implications the labor taxation has for the investment in R&D decision. In the empirical part of the paper, we shed light on how important the taxation of labor borne by employers is on R&D.

3. Specificity of R&D Investment

Theoretical literature are nearly all based on a neoclassical theory of growth, in which R&D is simply an alternative form of capital investment. The classical model created to estimate the private returns to R&D relies on the simple Cobb-Douglas production function augmented to include an additional input that is knowledge capital. However, there are important differences between R&D and ordinary capital investments. From the empirical point of view, investment in R&D is a type of spending which has number of characteristics that distinguish it from the investment in physical capital.

3.1. Labor intense R&D

The most important of these is the fact that at least two thirds of these investment include expenditures on salaries of employees. This consists of wages and benefits as a component share of total R&D expenditures (depending on how one counts overhead which includes individual benefits). According to National Science Foundation study (1995)- between 45 and 83% of total spending on R&D in USA are wages and benefits of scientific personnel. Couple of works confirms that observation. Golsbee (1998) approximates cost of wages and benefits in total share of R&D on 2/3. According to B.Hall (2000) most studies show that spending on compensation of employees amounts to at least from 60% to 80% costs of these investments. Since labor costs is the largest component of R&D spending, averaging about two thirds of total expenditures, one may assume that the higher the labor tax rate the higher the overall costs of R&D decision.

3.2. Inelastic R&D labor supply

Scientists and engineers have extremely high human capital that takes many years to accumulate and entry is small. Thus their labor supply is quite inelastic. Many factors can influence R&D labor supply, from education to taxes, but there is agreement that high skilled labor supply is important predictor of economic growth. For example, K.Murphy, A.Schleifer, and R.Vishny (1992) studied allocation of talent phenomenon using data from dozens of countries. They found that a 10 percentage point increase in the share of students concentrating in law was associated with 0.78 percentage point slower annual growth in per capita GDP. In other words, economic growth was slower in countries where there seemed to be more rent-seeking and lower R&D labor supply.

3.3. Riskier R&D

R&D investment is more risky than capital investment. Since the composition of R&D spending is different than physical capital, with more being spent on the wages of workers, the knowledge generated in the course R&D investment is to a large extent ”embodied” in these workers. That is why that kind of investment have higher degree of risk, since workers can leave the company, ”taking away” from it significant part of the investment (Hall, Griliches, and Hausman, 1986). Much of the knowledge ownership may not reside entirely with the firm. There also greater uncertainty of R&D, which lead to greater rate of return of R&D that other investments, but also greater variance of returns.Other worth mention study by Cullen, J.B., Gordon R.H. (2007) shows that level of corporate taxes has small or none impact on entrepreneurial risk taking. Since R&D spending is widely considered as more risky that capital expenditure, it could suggest that corporate taxes do not affect investment decision between R&D and physical capital. Most studies, in line with theory, found that the average R&D investment produced a return about three times larger than capital investment. In general, most studies show rates of return between 15% and 25%, but in many cases even higher (B.Hall 2010).

3.4. Relative costs of R&D

Differences between R&D and physical capital investment raises important theoretical questions which we can based on work by M.Miller (1977) who in 1977 first showed that the existence of tax deductions of interests on loans, distorts firms capital structure and leads to credit driven investments. At the same time labor taxes (employer’s costs, including especially payments to social security of workers, known as non-wage labor costs and tax burden) is significantly higher than the tax on the capital. Some authors explain this stylized fact (Wolf 2004) by

observing that increased mobility of capital explains why it is impossible for governments to effectively tax it. This should impel governments to shift fiscal costs of maintaining social spending to labor rather than capital, which is substantially less mobile factor of production. So tax structure can discourage companies from investing in the sector of R&D and thus reduce spending on R&D per country and encourage investment in physical capital with other factors unchanged. And taxes matters, as Schleifer, Djankov , Ganser, McLiesh and Ramalho (2010) found - a 10 percentage point increase in the first-year effective corporate tax rate raises the firm's debt to equity ratio by highly statistically significant 40 percentage points (the mean is 111 percent). In their study, countries with higher effective (as well as statutory) tax rates use sharply more debt. This result is consistent with most theories of optimal capital structure (Graham 2003). It is well known, that a change in the relative factor price could lead to less usage of one in the production process. To the extent labor taxes affects the relative price of capital and labor, and this should lead to a reallocation of inputs within and between firms and/or industries from R&D to physical capital that could have transitional growth effects. From that point of view one may conclude that due to the stylized fact that investment in R&D differs from the investment in physical capital by the composition of spending, which is highly labor intense, the higher is the labor tax the lower should be the level of investment in R&D relative to investment in physical capital. Putting it simply, in countries with higher labor tax one should observe lower R&D investment and higher physical capital investment, thus lower level of technological innovation. Thus labor taxes can discourage companies to invest in the sector of R&D and lead lower pace of the technological progress.

4. Empirical Formulation

Our first hypothesis is that countries with a higher degree of labor taxation spend less on R&D than countries with low labor taxes. The second hypothesis assumes that countries with higher labor tax reallocate investment expenditures into Physical Capital, i.e. the higher is labor tax the higher is Gross Fixed Capital Formation. The study use panel data model covering 18 OECD countries for the period 1990-2008 and also cross section data covered 41 countries in year 2008. Tests diagnostic revealed heteroskedasticity and autocorrelation across entities. We use Pooled OLS estimator with Driscoll and Kraay (1998) correctness for standard errors for robustness of estimations. Driscoll and Kraay (1998) proposed a nonparametric covariance matrix estimator that produces heteroskedasticity and autocorrelation consistent standard errors that are robust to general forms of temporal dependence (and spatial). The error structure is assumed to be heteroskedastic, autocorrelated up to some lag and possibly correlated between the groups (panels).

4.1. A look at the Data

The data are taken from the OECD Statistics database, World Bank World Development database and include almost twenty years of time series. We use two measures of R&D investment for robustness of estimations. First is total R&D investment in relation to GDP in 1990-2008 period. Second measure is R&D investment (GERD) performed by Business Enterprise as a percentage of GDP in 1990-2008 period. ” Labor Tax ” - The sum of all labor - related taxes payable by employee, including payroll taxes, mandatory social security contributions, mandatory health insurance, mandatory unemployment insurance, worker’s compensation insurance contributions, and any local contributions that are proportional to payroll or number of employees. It is expressed as a percentage of pretax earnings. As a measure of investment in physical capital we use ” Gross Fixed

Capital Formation ” in relation to GDP in years 1990-2008. It is widely used indicator for the overall level of investment. As control variables we use ” Income Tax Rate (PIT) ” as a percentage of pretax earnings, ” Corporate tax rate (CIT) ” and ” Researchers per million of population ” as indicator of number of high skilled workers. Table 1 presents summary statistics of labor tax, personal income tax, total R&D investment and private R&D. Several interesting findings emerge from these data. First, the average labor tax rate is about 13 percent, and does vary much across income groups. The labor tax rate is 0.1 percent for Denmark, and high as 28 percent for Spain. Secondly, there is variation with R&D expenditure from high 3.8 percent for Sweden and Finland and low 0.9 for Portugal. The differences is quite large for business R&D ranging from 0.4 percent for Italy and Portugal to 2.5 in Sweden and Finland.

The summary statistics on variables are show below:

Table 1: Summary statistics

Variable	Mean	Std. Dev.	N
RDGDP	2.012	0.783	208
PrivateRDGDP	1.223	0.647	298
LaborTax	13.298	8.535	256
IncomeTax	29.73	9.522	358
GFCF	21.373	3.222	358

5. Results

Table 2 presents our first results. In first regression the dependent variable is expenditure on R&D as a percentage of GDP and independent variable is Labor Tax. We use three variables as controls for a total of 4 specifications. In second re-

Table 2: Pooled OLS Driscoll-Kraay Std.Err

	(1)	(2)	(3)	(4)
	RDGDP	RDGDP	RDGDP	RDGDP
LaborTax	-0.0264***	-0.0272***	-0.0199**	-0.0101***
	(-4.73)	(-5.16)	(-3.48)	(-5.40)
IncomeTax		0.0171**	0.00701	0.0109***
		(3.36)	(1.41)	(8.42)
GFCF			-0.0895***	-0.0354***
			(-5.47)	(-4.27)
RDm				0.468***
				(28.46)
_cons	2.322***	1.820***	3.913***	0.987***
	(25.70)	(12.71)	(17.14)	(6.88)
N	163	163	163	136

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

gression the dependent variable is Business expenditure on R&D as a percentage of GDP. Similary Labor Tax is independent. Next we check for robustness of our

Table 3: Pooled OLS Driscoll-Kraay Std.Err

	(1)	(2)	(3)	(4)
	PrivateRDGDP	PrivateRDGDP	PrivateRDGDP	PrivateRDGDP
LaborTax	-0.0172***	-0.0184***	-0.0147**	-0.00470**
	(-4.24)	(-4.48)	(-3.18)	(-3.34)
IncomeTax		0.0102		0.0149***
		(1.95)		(6.52)
GFCF			-0.0430	
			(-1.80)	
RDm				0.370***
				(15.23)
_cons	1.436***	1.141***	2.302***	-0.358**
	(22.49)	(8.08)	(4.58)	(-3.37)
N	223	223	223	139

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

previous estimations. We add " Corporate tax rate (CIT) " to our model as control variable. Labor taxis still statistically significant, however Corporate tax rate doesn't seem to have a impact on R&D spending. We extend our country sample to 41 countries, both high income as middle income. We use cross section data on Labor Tax from 2007 year and data on Business R&D investment form years 2006-2008, dependent on availability of data. The dependent variable is Business

Table 4: Pooled OLS Driscoll-Kraay Std.Err

	(1)	(2)	(3)	(4)
	PrivateRDGDP	PrivateRDGDP	PrivateRDGDP	PrivateRDGDP
LaborTax	-0.0176***	-0.0189***	-0.0161**	-0.0149**
	(-4.51)	(-4.96)	(-3.46)	(-3.10)
CIT	-0.00421	-0.00579*	-0.00262	-0.00125
	(-1.37)	(-2.50)	(-0.76)	(-0.32)
IncomeTax		0.0108	0.00625	
		(2.04)	(1.77)	
GFCF			-0.0360	-0.0425
			(-1.59)	(-1.69)
_cons	1.593***	1.342***	2.079***	2.339***
	(14.21)	(7.11)	(6.45)	(5.63)
N	223	223	223	223

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

expenditure on R&D as a percentage of GDP. Results are present in Table 4.

Table 5: OLS

	(1)
	rdb
LaborTaxW	-0.0303*
	(-2.26)
_cons	1.551***
	(5.50)
N	38

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The model shows that labor tax costs actually have a significant and negative impact on the level of investment in R&D measured by total public and private spending on R&D performed by firms. This effect is quite large. The magnitude of the effects documented in Table 2 and 3 raises obvious questions about spuriousness. We add a variety of variables to the specifications in Table 2 , 3 and 4 to verify whether the results are robust. We added these controls individually, and many of them were significant predictors of R&D investment individually. First we add " Income Tax Rates (PIT) " as a indicator of level of taxes imposed on workers, as to control the labor supply effect. Surprisingly, but with accordance with our hypothesis, personal income tax rates turns out to have positive sign of coefficient in comparison to labor tax, with variance of statistical importance dependent on specification. Next we check whether labor tax rates is statistically significant if one will control for Corporate tax rate. We found that corporate taxes do not change the results showing negative impact of Labor tax. Taxes that are paid for labor by business are more important predictor of R&D spending that other taxes,

Table 6: Pooled OLS Driscoll-Kraay Std.Err

	(1)	(2)	(3)
	GFCF	GFCF	GFCF
LaborTax	0.0568*	0.0792**	0.0878***
	(2.46)	(3.68)	(5.26)
IncomeTax	-0.121***		-0.108***
	(-10.86)		(-5.02)
RDm		-0.358*	-0.402**
		(-2.44)	(-3.40)
_cons	23.98***	21.25***	24.51***
	(45.24)	(51.37)	(39.18)
N	256	147	147

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

i.e personal income tax (PIT) paid by employers and corporate tax rate (CIT) paid by business from their overall activity. Also in line with predictions, number of researchers per million of population as control was characterized by the lowest value of coefficients. This stems from endogeneity of this control variable, but from robustness point of view labor tax still seems to have negative and statistically significant impact on dependent variable. As for most important control variable, i.e Gross Fixed Capital Formation(GFCF), we observe, negative sign of coefficient, which suggests that the level of capital accumulation may have negative link with R&D. However, this effect is smaller than the personal tax income effect and in the case of our model, statistically significant only in case of total R&D. In case of innovation performed by firms - p-value is much too high. Note that, with all these controls, the coefficients on our tax variables maintain their magnitude and statistical significance throughout. The estimation shows that the non-wage labor costs actually have a negative impact on the level of investment in R&D. Next, as for checking the robustness of our estimation, table 5 shows that labor tax also have negative impact with coefficient similar range in extended sample of countries, but with smaller significance. Table 6 presents additional regression and shows the impact of labor tax on Gross Fixed Capital Formation (GFCF). The employee-borne part of labor taxes are significant across estimation and range from 0.05 to 0.08. In this model the higher the labor taxes borne by employee, the higher level of investment in physical capital.

6. Conclusion

The effects documented in our study shows that there is statistical relationship between labor tax cost and type of investment decision. On theoretical grounds, this empirical fact, stems from the effect of relative higher costs of R&D investment to Gross Fixed Capital investment that labor taxes have on costs on employment.

Labor tax have negative (and quiet strong) impact on innovation, measured by the level of total expenditure on R&D. Results suggest that 10% increase in labor tax reduces R&D investment on average by 0.2 to 0.25% of GDP (average R&D investment rate is 2 percent) or reduces R&D investment performed by firms on average by 0.1% to 0.15% of GDP (average business R&D investment rate is 1.2 percent) . Analysis shows also that countries which have labor tax rates in range of 30 percent of pretax earnings, can have lower level of R&D by 0.6 to 0.75% of GDP, due to this effect only. We found that labor tax costs affect costs of R&D relative ro physical capital accumulation. Raising labor tax by 10% is correlated with 0.5 percent increase in Gross Fixed Capital Formation (average GFCF is 21 percent). Magnitude of increase is in range of magnitude of decrease in R&D in effect of similar labor tax increase., Concluding, our estimation point to mechanism by which firms reacts to high labor tax by decrease in R&D investment and increase in physical capital investment. These findings raises question whether the countries that are characterized by high taxes on labor, unnaturally allocate more funding for physical capital investment, like dwellings and construction or the import of capital goods which are not only much less taxed in relation to work, but undergoes depreciation. That mechanism distorts relative prices of in investment decision process, reducing the optimal rate of growth. This could lead to more technology transfer from abroad and less effort to innovate at the world frontier, leading to lower technological progress. Making labor taxes less distortionary by shifting taxation form labor to consumption may improve the economic performance not only by increase in employment but also directly by increase investment in innovation.

7. Appendix

7.1. List of countries in panel estimation

Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States

7.2. List of countries in cross country estimation

Argentina, Australia, Austria, Belgium, Bulgaria, Canada, Switzerland, Chile, Czech Republic, Germany, Denmark, Spain, Finland, France, United Kingdom, Greece, Hong Kong, China, Hungary, Ireland, Israel, Italy, Japan, Korea, Lithuania, Latvia, Mexico, Netherlands, Norway, New Zealand, Poland, Portugal, Romania, Russia, Singapore, Slovakia, Slovenia, Sweden, Turkey, Ukraine, United States

References

[1] Barro, Robert J. 1991. Economic Growth in a Cross Section of Countries. Quarterly Journal of Economics, 106(2): 40743.

[2] Baumol, William J., Robert E. Litan, and Carl J. Schramm. 2007. Good Capitalism, Bad Capitalism, and the Economics of Growth and Prosperity. New Haven, CT: Yale University Press.

[3] Cullen, J.B., Gordon R.H. .2007. Taxes and entrepreneurial risk-taking: Theory and evidence for the U.S. Journal of Public Economics 91, 14791505

[4] DeLong, J. Bradford, and Lawrence H. Summers. 1991. Equipment Investment and Economic Growth. Quarterly Journal of Economics, 106(2): 445502.

[5] Driscoll, J., and A. C. Kraay. 1998. Consistent covariance matrix estima-

tion with spatially dependent data. Review of Economics and Statistics 80: 549(560).

[6] Elschner, C., L. Lammersen, M. Overesch and R. Schwager. 2006. The Effective Tax Burden of Companies and of Highly Skilled Manpower: Tax Policy Strategies in a Globalised Economy, Fiscal Studies, vol. 27, no. 4, pp. 513-524.

[7] Golsbee.A .1998. Does Government R&D Policy mainly benefits scientists and engineers? A.E.A. Meetings, Chicago, Illinois January, 1998

[8] Graham, John R. 1996. Debt and the Marginal Tax Rate. Journal of Financial Economics, 41(1): 4173

[9] Lee Y., Gordon R.H. 2005. Tax structure and economic growth. Journal of Public Economics, 89 (2005) 1027-1043

[10] Griliches, Z. 1997. R&D and Productivity: The Econometric Evidence Chicago, IL: University of Chicago Press.

[11] Hajkova, D., G. Nicoletti, L. Vartia, K.Y. Yoo.2006. Taxation and Business Environment as Drivers of Foreign Direct Investment in OECD Countries, OECD Economic Studies, No. 43/2.

[12] Hall, B. H. 1996. The Private and Social Returns to Research and Development in Technology, R&D, and the Economy Bruce L. R. Smith and Claude E. Barfield, Eds. Washington, DC:

[13] Helpman, Elhanan. 1993. Innovation, Imitation, and Intellectual Property Rights. Econometrica 61, no. 6: 1247-80

[14] Jones, C. and J. Williams.1998. Measuring the Social Rate of Return to R&D, Quarterly Journal of Economics, 113(4), 119-35

[15] Jorgenson, Dale W.1963. Capital Theory and Investment Behavior. American Economic Review, 53(2): 24759.

[16] Hall, Robert E., and Dale W. Jorgenson. 1967.Tax Policy and Investment Behavior. American Economic Review, 57(3): 391414.

[17] McDaniel, Cara.2007. Average tax rates on consumption, investment, labor and capital in the OECD countries 1950 - 2007. Arizona State University working paper

[18] Miller, Merton H. 1977. Debt and Taxes. Journal of Finance, 32(2): 26175.

[19] Murphy, Kevin, Andrei Shleifer, and Robert Vishny. 1992. The Allocation of Talent: Implications for Growth, Quarterly Journal of Economics, 106(2), pp. 503-530.

[20] National Science Foundation. 1995. Research and Development in Industry, Government Printing Office; Washington D.C

[21] OECD, Taxing Wages 2002-2008, Paris: Organisation for Economic Cooperation and Development.

[22] OECD.2010. Tax Policy Reform and Economic Growth, Paris, Organisation for Economic Cooperation and Development.

[23] Ryoo, J. and S. Rosen.1992.The Market for Engineers, Stigler Center paper 83.

[24] Schleifer A., Djankov S., Ganser T., McLiesh C., Ramalho R. 2010. The Effect of Corporate Taxes on Investment and Entrepreneurship American Economic Journal: Macroeconomics 2 (July 2010): 3164

[25] Wolf.M.2004. Why Globalization Works?, Penguin Press, London