The Impact of Swiss Taxation on Economic Growth*

by Georg Junge, Basel

Introduction

This paper is an attempt to quantify the importance of the interference of the Swiss tax system with Swiss economic growth and factor productivity. Taxes can affect economic growth in two ways: first by influencing aggregate supply of the main factors of production and, second, by influencing the efficiency of resource utilization (factor productivity). The focus of this paper is on the second effect. As shown by Table 1 Swiss growth rates of labor productivity have been lower than Swiss growth rates in the capital-labor ratio indicating that gross additions to the capital stock became less efficient over time. The phenomenon is wellknown to most advanced countries (France, Germany, Japan, Sweden and the United States) and many explanations have been proposed. They range from alterations in workers' motivation and investment behavior to exogenous supply-side shocks (energy prices) to changes in the output mix and to excessive taxation. The latter hypothesis will be considered in this paper.

Table 1
Average Growth Rates of Labor-Productivity, the Capital-Labor Ratio and Tax Burden

<table>
<thead>
<tr>
<th>Item</th>
<th>49-51</th>
<th>51-57</th>
<th>57-64</th>
<th>64-71</th>
<th>71-80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor Productivity</td>
<td>3.43</td>
<td>2.91</td>
<td>2.73</td>
<td>3.42</td>
<td>1.61</td>
</tr>
<tr>
<td>Capital-Labor Ratio</td>
<td>-1.16</td>
<td>0.04</td>
<td>4.17</td>
<td>6.43</td>
<td>4.13</td>
</tr>
<tr>
<td>Tax Burden</td>
<td>-3.75</td>
<td>-1.83</td>
<td>1.36</td>
<td>1.64</td>
<td>1.65</td>
</tr>
</tbody>
</table>

Note: The periodization roughly corresponds to the peaks of business cycles and hence de-emphasizes the cyclical variations of capital and labor utilization.

* I wish to thank Beat Bürgenmeier, Alain Schönenberger, Milad Zarinnejadan and an anonymous referee for helpful comments. Support from the research grant No. 4.603.0.82.09 of the Fonds national suisse de la recherche is gratefully acknowledged.

In fact, in Switzerland as in most advanced countries, the growth rates of aggregate tax burden (the ratio of total tax revenue to GDP) increased continuously (see Table 1). In a recent cross-sectional study including twenty industrialized and developing countries (Switzerland not among them), Marsden (1983) shows that taxation has a significant negative impact on factor productivity and economic growth. Using a similar time series regression model of Swiss economic growth and factor productivity for the period 1955 to 1981, Marsden's results are not confirmed by the Swiss data at a comparable level of confidence. However, the estimates show that if there is an influence of taxation on economic growth and factor productivity, it is not non-negligible.

This paper is organized as follows. Section 1 discusses some of the links between taxes and economic growth. Section 2 presents an econometric model. Section 3 discusses the data and the results. Finally, section 4 summarizes the findings and points out a few caveats.

1. Links between Taxes and Economic Growth

Numerous direct and indirect links exist between a country's tax burden and its economic growth. Taxation affects the aggregate supply of the main factors of production and thereby economic growth. However, retardation of economic growth also results from the interference of taxes with the optimal factor allocation and from compliance costs associated with taxation. The latter effects are discussed in this section.

The channels by which taxation affects the optimal factor allocation are subtle. Three cases are frequently discussed in the literature: the effect of differential factor taxation, the influence of uncertainties of the real tax burden on economic growth and the negative effects of capital gains taxation.

As shown by Harberger (1979, Chapter 8), a tax imposed on income from capital in the corporate sector raises the pretax rate of return there while its net-of-tax return is reduced. In the first instance it will be below the net rate of return to capital in the noncorporate sector. However, as capital is free to move, it will leave the corporate sector and move towards industries in the noncorporate sector which initially have a higher net rate of return. The adjustment process ceases when the net return to capital is equal across all industries. But this implies that the pretax return to capital differs between the industries of the corporate and the noncorporate sector and as a consequence the new production possibility curve lies within the original one. Hence, in order to produce the original output, additional resources are required. The differential taxation of capital income across industries of the corporate and the noncorporate sector is not the only reason why production efficiency and the growth potential of an economy may be negatively affected. The same effect arises
when capital is taxed differently from sector to sector (as for example in Switzerland), when depreciation allowances differ across industries, or when tax rates differ across regions. The latter effects may be important for Switzerland, where the Federal Government, cantons and communes have their own taxes and can offer special depreciation allowances to industries.

Denison (1979) points out another example of capital income taxation with productive efficiency. Taxation of the return to capital biases the distribution of investment and R & D away from risky to less risky projects. The following example is given. Assume there are two investment projects of one million. The first is thought to offer a sure repayment of 1.1 million while the second offers a repayment of 11 million, but has only a 10 percent probability of succeeding. The two investment projects are equally advantageous because they have the same expected returns. But with taxation of the capital return, the expected value of the safe project becomes larger than that of the unsafe project and hence it is the safe project which will be realized. As a consequence, certain growth opportunities of an economy are not utilized.

Uncertainties about the size of the real tax burden and regulatory conditions associated with an investment project are considered highly adverse to efficient resource allocation (see e.g. Denison, 1979). Although any investment decision is confronted with some uncertainties as it is based on expected future prices and returns, additional uncertainties arise from complex tax rules and their interaction with inflation. In the planning stages of an investment project, the existence of complex tax rates creates additional costs and raises uncertainties since tax rules and depreciation allowances may change and render the planned combination of inputs suboptimal. Moreover, along with inflation, uncertainties arise about the real tax burden associated with an investment project. Since uncertainties in future prices and net-of-tax returns impair the efficiency of current allocation decisions, current output is likely to be negatively affected.

A third way taxes interfere with the productive efficiency of an economy is through the taxation of capital gains. The so-called locked-in effect, i.e. the effect that individuals do not sell securities which they would have sold in the absence of taxation, may lead to a loss of productive efficiency. Steglitz (1983) points out that the locked-in effect tends to increase the price volatility of equities relative to other securities and as a consequence equities become less attractive. Second, in cases where the ownership of assets exerts an influence on its use, the disincentive (set by the tax on realized capital gains) to sell them to those who can manage them best leads to production inefficiencies. Third, taxation of capital gains can lead to a suboptimal termination of an investment project. We hasten to say that in the Swiss case, it is unlikely that the effects of capital gains taxation are important, because

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2 When the values of certain securities increase, their holders are not induced to sell them, since they are only taxed once their gains are realized.
taxes on capital gains are imposed only in a few cantons and its tax proceeds are rather modest.

The setting up and maintenance of the tax system absorbs resources. There are not only the maintenance costs of tax administration but also the cost imposed on tax payers to comply with the tax laws. The compliance costs of taxation occur at various levels (Sandford, 1981). First, costs are involved in understanding the nature and requirements of the tax law. These types of costs are particularly relevant when a new tax is introduced or an existing one is changed. Second, costs incurred by firms and individuals occur in maintaining an appropriate accounting system: filing reports, compiling data, tax collection and its payment to the tax administration. Thus, the tax system of a country absorbs real resources by maintaining a tax administration and by requiring businesses to divert production factors from production of output to tasks required to comply with taxation. This implies that additional inputs are required to produce any given level of output.

In concluding let us point out that the effects of taxes on economic growth and factor productivity need not be always negative. To the extent that government revenue is used for public investment projects (transportation, roads, health, R & D, etc.), the growth potential of the economy will increase. Moreover, it is well known that taxes can be used to remove existing distortions. For example, wage differentials across industries caused by unionism can be removed by compensatory taxation.

2. The Model

To provide preliminary evidence of the effect of taxation on economic growth a simple time series regression model is employed. It is assumed that Swiss economic activity can be described by a production function with constant returns to scale of the form:

\[ Y = a (KLI)^e \]

where \( Y \) represents output, \( KLI \) capital and labor inputs, and \( B \) aggregate tax burden. The term \( KLI \) is defined as the weighted sum of capital and labor, the weights being the corresponding factor shares. Taking the natural logarithm and first differences of equation (1) yields:

\[ \Delta \ln Y = \ln a + \Delta \ln (KLI) + c \Delta (B) \]

where \( \Delta \) represents the first difference operator. According to equation (2), the growth rate of output \( (\Delta \ln Y) \) is related to the flow of capital-labor inputs, and the change in tax burden. The equation isolates the impact of taxation on output or factor productivity, because the impact of taxes on aggregate factor supply is already reflected in the input data of capital and labor. As pointed out by Christainsen and
Haveman (1981), a regression of a share-weighted production function has the advantage of reducing the presence of multicollinearity between capital and labor inputs since the factor inputs are combined in a single term. Griliches and Mairesse (1983) also employ the estimation of weighted production functions in their recent work about the slowdown of U.S. and French growth rates of productivity. Subtracting the weighted sum of capital and labor inputs yields the factor productivity of capital and labor. Hence, equation (2) can be rewritten in its factor-productivity form:

\[ D \ln (KLP) = \ln a + c D(B), \]  

(3)

where KLP is the capital-labor productivity.

Tax burden is a difficult concept to measure. As noted, the definition should be based on the view that taxation interferes with the efficiency of optimal resource utilization. What matters in that respect is the tax wedge driven between factor prices, the uncertainties of the real tax burden and the distortive effects resulting from compliance costs and capital gains taxation. However, these tax effects cannot be computed readily on an aggregated basis. The usual practice is to use average effective tax rates in order to measure the impact of taxation on economic growth and resource utilization (e.g. Marsden, 1983). In this study, the average effective tax rate is measured as total tax proceeds relative to GDP. In addition, as an alternative measure, real total tax proceeds (deflated by the GDP deflator) are employed in the regression.

3. Data Specifications and Empirical Results

The impact of taxes on GDP and capital-labor productivity is investigated by means of a regression analysis using annual data for the period of 1955 to 1981. In including the tax variable in the regression equation, certain particularities of the Swiss tax system have to be taken into account. The Swiss system of tax collections implies rather long lags between earned incomes and tax collections. Three periods are distinguished in the case of the Federal “National Defense” income tax: the so-called computation years, the tax years and the payment years. Accordingly, taxes are raised on the basis of the average taxable income of the current year and the previous year (tax years). But since the income of this year and often of the previous year are not known by the tax authorities, the hypothesis is made that the average taxable income of the tax years is equal to the average income of the two years before, i.e. the computation years. Therefore, current tax payments refer in fact to the average income earned two to four years ago. Moreover, taxpayers have the choice of paying either in the current year or in the following year (payment years). The relationship is described by the following equation:

\[ \text{TAX} (t + 1) + \text{TAX} (t) = g [1/2 (Y (t-2) + Y (t-3))], \] 

(4)
where $Y$ is the taxable income and the coefficient "g" is the tax rate. In the extreme, a proportion of tax proceeds payed at $(t+1)$ can result from earnings five years ago. However, the wellknown zig-zag pattern of Swiss tax proceeds (high tax proceeds in even years and low tax proceeds in odd years) suggest that Swiss taxpayers typically pay their tax obligations in the first payment year. These are the regulations of the Federal income tax. The largest fraction of tax proceeds is raised by cantons and communes. Although their taxation practices do not necessarily correspond to the Federal regulations, they often employ them.

The payment pattern and the long institutional lags between tax collections and accrual income raise problems concerning the calculation and the appropriate incorporation of the tax variables in equations (2) and (3). In order to smooth the zig-zag pattern of tax proceeds in the regressions, they are transformed into biannual moving averages. The growth rate of the moving average of tax proceeds deflated by the GDP deflator represents one measure of aggregate taxation. The other measure is the average effective tax rate, i.e. the ratio between tax revenue and accrual income. The estimations below assume an institutional lag of three years between earned income and tax collections [TAX $(t)/$GDP $(t-3)$]. Other institutional lags (for example $t-1$ and $t-2$) were assumed in preliminary estimates, without changing the nature of the results. In order to avoid problems of simultaneity between current tax proceeds and GDP, the two alternative measures of taxation included in the regressions were lagged by one period.

Table 2

$$\Delta \ln Y_t = \ln a + b \Delta \ln KLI_t + c \Delta B_{t-1} + d \ D75 + v_t$$
$$\Delta \ln KLP_t = \ln a + c \Delta B_{t-1} + d \ D75 + w_t$$

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Const.</th>
<th>KLI $t$</th>
<th>(\text{TAX/GDP}_{t-1})</th>
<th>(\text{TAX}_{t-1})</th>
<th>D75</th>
<th>$R^2$</th>
<th>SEE</th>
<th>D.W.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP $t$</td>
<td>0.016** (0.005)</td>
<td>1.406** (0.193)</td>
<td></td>
<td></td>
<td>-0.011 (0.008)</td>
<td>0.76</td>
<td>0.016</td>
<td>2.16</td>
</tr>
<tr>
<td>GDP $t$</td>
<td>0.017** (0.005)</td>
<td>1.545 (0.195)</td>
<td>-0.195* (0.098)</td>
<td></td>
<td>0.014* (0.008)</td>
<td>0.79</td>
<td>0.015</td>
<td>2.31</td>
</tr>
<tr>
<td>GDP $t$</td>
<td>0.033** (0.010)</td>
<td>1.446** (0.185)</td>
<td></td>
<td></td>
<td>-0.307* (0.162)</td>
<td>0.78</td>
<td>0.015</td>
<td>2.01</td>
</tr>
<tr>
<td>KLP $t$</td>
<td>0.025* (0.004)</td>
<td>-0.097 (0.104)</td>
<td></td>
<td></td>
<td>-0.022* (0.009)</td>
<td>0.18</td>
<td>0.017</td>
<td>1.96</td>
</tr>
<tr>
<td>KLP $t$</td>
<td>0.037** (0.010)</td>
<td>-0.262 (0.177)</td>
<td></td>
<td></td>
<td>-0.028** (0.009)</td>
<td>0.22</td>
<td>0.016</td>
<td>1.81</td>
</tr>
</tbody>
</table>

Note: $R^2$ is the corrected measure of goodness of fit, SEE is the standard error of the regression and D.W. is the Durbin-Watson statistic.

** significant at a 1-percent level
* significant at a 5-percent level
In addition to the tax variables, equations (2) and (3) incorporate the weighted capital and labor inputs (KLI). The calculation of this term is described in the data appendix. Preliminary regressions showed that a dummy variable reflecting the decline of technical progress after 1973/74 was required in most equations. On the other hand, the inclusion of variables reflecting business cycle conditions proved to be insignificant and hence was dropped in the estimations. The final form of equations (2) and (3) and the estimated results are given in Tables 2 and 3.

Table 2 reports the results of regressions with the two measures of taxation lagged by one period, while Table 3 gives results of regressions with a more general lag specification. First, note the general performance of the regressions. The Durbin-Watson statistics in general attest to the absence of residual autocorrelations and hence the significance levels of the regression estimations should be reliable. Moreover, typical pattern of equation misspecification such as high values for R² combined with bad Durbin-Watson statistics cannot be detected. The diagnostic statistics suggest that the equation does not suffer from misspecification problems. It seems that the model provides enough structure to investigate our issue. The corrected goodness of fit measure explains nearly 80 percent of the variance in GDP growth, but (as expected) is rather low in the equations where capital-labor productivity is a dependent variable (between 15 and 22 percent).

Second, the coefficients of the combined capital-labor inputs in the GDP growth equation and the constants are highly significant. The constant terms and the dummy variables are efficiency parameters. The negative sign of the dummy variable indicates a loss of efficiency after 1973/74, which may be associated with the previous rise in energy prices and other supply-side shocks, as for example an increase in prices of imported inputs due to the appreciation of the Swiss franc. The effect of the combined capital-labor input is in all equations above unity indicating that the contribution of capital and output exceeds their factor shares. Again a variety of reasons can be held responsible for it such as embodied technical change, public investment projects, R&D policies, etc. Although the identification and the quantitative assessment of these issues are interesting, it would be a formidable project to treat them simultaneously with our issue. For our purpose, it is sufficient to estimate a small model that provides enough structure to examine the interference of taxation with productive efficiency.

Finally, in turning to the tax arguments, Tables 2 and 3 show that in all cases the overall impact of taxation (the sum of the tax coefficients) is negative, indicating that taxation decreases the rate of economic growth and of capital-labor productivity. However, in general, coefficients are not statistically significant at the 1- and 5-percent level of significance. Marginally significant estimates are measured only in the cases of the one-period lagged effect of the growth rate of the effective tax rate and of the growth rate of real taxation on economic growth. The size of these coefficient values is...
### Table 3

**The Impact of Taxation on Economic Growth and Capital-Labor Productivity**

\[
\Delta \ln Y_t = \ln a + b \Delta \ln KLI_t + \sum_{i=1}^{3} c_i \Delta B_{t-i} + d D75 + \nu_t
\]

\[
\Delta \ln KLP_t = \ln a + \sum_{i=1}^{3} c_i \Delta B_{t-i} + d D75 + \nu_t
\]

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Const.</th>
<th>KLI</th>
<th>(TAX/GDP)</th>
<th>(\sum_{i=1}^{3} \frac{(TAX/\text{TAX/GDP})_{t-i}}{\text{TAX}})</th>
<th>F-Test</th>
<th>(TAX)</th>
<th>(\sum_{i=1}^{3} \frac{(TAX)}{\text{TAX}}_{t-i})</th>
<th>F-Test</th>
<th>D75</th>
<th>(2^k)</th>
<th>SEE</th>
<th>D.W.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP (_t)</td>
<td>0.016**</td>
<td>1.582**</td>
<td>-0.231 (0.143)</td>
<td>-0.004 (0.009)</td>
<td>-0.168 (0.109)</td>
<td>F(3,21)=1.387</td>
<td></td>
<td></td>
<td>-0.012 (0.008)</td>
<td>0.77</td>
<td>0.015</td>
<td>2.35</td>
</tr>
<tr>
<td>GDP (_t)</td>
<td>0.034*</td>
<td>1.431**</td>
<td>-0.067 (0.127)</td>
<td>-0.003 (0.009)</td>
<td>-0.003 (0.009)</td>
<td>F(3,21)=1.387</td>
<td>-0.282 (0.241)</td>
<td>-0.042 (0.255)</td>
<td>-0.004 (0.208)</td>
<td>-0.319 (0.249)</td>
<td>F(3,21)=1.10</td>
<td>-0.021* (0.011)</td>
</tr>
<tr>
<td>KLP (_t)</td>
<td>0.025**</td>
<td>1.431**</td>
<td>-0.083 (0.124)</td>
<td>-0.004 (0.009)</td>
<td>-0.118 (0.119)</td>
<td>F(3,22)=0.720</td>
<td></td>
<td></td>
<td>-0.021** (0.008)</td>
<td>0.15</td>
<td>0.017</td>
<td>2.12</td>
</tr>
<tr>
<td>KLP (_t)</td>
<td>0.046**</td>
<td>1.431**</td>
<td>-0.026 (0.130)</td>
<td>-0.009 (0.009)</td>
<td>-0.118 (0.119)</td>
<td>F(3,22)=0.720</td>
<td>-0.214 (0.255)</td>
<td>-0.113 (0.269)</td>
<td>-0.078 (0.218)</td>
<td>-0.406 (0.261)</td>
<td>F(3,22)=1.08</td>
<td>-0.031** (0.010)</td>
</tr>
</tbody>
</table>

**significant at a 1-percent level**

*significant at a 5-percent level
coefficients suggests a non-negligible impact of taxes on economic growth. An increase of the growth rate of the effective tax rate by one standard deviation (i.e. 0.0335) decreases economic growth by 0.00653, which amounts to approximately 20 percent of its 27-year mean value. Similarly, a one-standard deviation increase in the growth rate of real taxation (i.e. 0.0244) generates a decline in economic growth of 0.00749, which is approximately 23 percent of its 27-year average value. The regression results concerning capital-labor productivity perform less well. They become significant only at levels of about 10 to 20 percent.

For the regression estimations of the tax variable with three lags (Table 3), the estimated tax coefficients are not significant individually or as a group. In fact, the F-tests indicate that the null hypothesis of no influence of the effective tax rate on economic growth is rejected at a marginal level as high as 27 percent, as is the null hypothesis of no influence of the growth rate of real taxation on GDP growth at a marginal level of 37 percent. The lag distribution of the tax variables has only a loosely determined form because of the lack of prior restrictions on its shape. Still, note that the absolute size of the coefficients generally declines at higher lags. Since the inclusion of additional lags of the tax variables renders the taxation impact insignificant, it attests to its low level of significance. Moreover, once the equation is written in its factor productivity form, the significance level of the tax impact drops even more. Since the two specifications (equations (2) and (3)) are different expressions of the same model, the drop in significance levels suggests that tax effects are hardly present.

The robustness of the results were checked using alternative income variables. Replacing the denominator of the average effective tax rate by other income terms such as national income, households income and capital income yields essentially the same results. Similarly, if economic growth and growth rates of the capital-labor productivity are measured in terms of real GNP, results are similar to those presented in Tables 2 and 3.

4. Summary and Caveats

The results do not support the hypothesis that taxation has a significant negative impact on economic growth. However, if such a relationship does exist, the estimated coefficients suggest that the impact will be non-negligible and will serve to explain the slowdown of Swiss productivity.

A parsimonious model is used to derive this conclusion. It provides enough structure to isolate the direct impact of taxation on economic growth and factor productivity. Yet, it does not identify other factors (supply-side shocks, changes in output mix, etc.), which may have contributed to the productivity slowdown nor does it consider indirect links of taxation on economic growth. Notably, the channels be-
tween taxation and economic growth that operate through the capital and labor markets are ignored\(^4\). Similarly, the interaction between taxes and government outlays are bypassed. A priori, nothing can be said about the overall impact of this interaction. To the extent that the tax revenue is used for public investment the growth potential of the economy may be raised, which may outweigh the distortive effects of taxation. On the other hand, increased government spending may very well reinforce the slowdown in economic growth. This can happen for example if the government absorbs workers into public employment, where productivity is low or if the government activity cuts the supply of resources available to produce investment goods. These issues as well as the identification of other factors are beyond the scope of this paper. They have been treated elsewhere in the literature which seems to suggest that many separate factors, one of them being taxation, contribute to the slowdown of economic growth. The message of this paper is that there is no evidence of a significant direct interference by the Swiss tax system in the Swiss growth potential.

However, this result does not imply anything about the impact of taxation on economic welfare. Finally, note that the results are sensitive to the use of crude proxies to measure tax effects on factor productivity. The distorting impact of taxation on economic growth and resource utilization depends on intersectoral differences of factor taxation, on uncertainties about the future real tax burden, and on compliance costs. These effects may be insufficiently measured by tax proceeds or average effective tax rates.

**Data Appendix**

\[ KLI = \text{capital and labor input. Calculated as: } \text{Dln}(KLI) = s(k) \text{Dln}(K) + s(l) \text{Dln}(L) \text{ where } K = \text{capital stock, } L = \text{working population, } s(k) = \text{factor share of capital and } s(l) = \text{factor share of labor.} \]


\[ L = \text{working population (population active). Published by the Office fédéral statistique (1983), "Séries longues de la comptabilité nationale suisse".} \]

\[ s(k) = \text{capital share. Calculated on the basis of the national account statistics of the Office fédéral statistique as: } s(k) = \frac{KY}{TY}, \text{ where } KY = \text{capital income, } TY = \text{total income and} \]

\[ \begin{align*}
\text{TY} & = \text{REM + PR + INT + DIV + SPR and } KY = KYC + KYNC. \\
\text{REM} & = \text{Rémunération des Salaires} \\
\text{PR} & = \text{Revenue d'exploitation des personnes indépendentes (noncorporate sector entrepreneurial income).} \\
\text{INT + DIV} & = \text{Intérêts + Dividendes} \\
&(\text{property income of households}) \\
\text{SPR} & = \text{Epargne des sociétés privés} \\
\text{KYC} & = \text{capital income of the corporate sector.}
\end{align*} \]

\(^4\) In another study the impact of Swiss taxation on Swiss private nonresidential investment has been found small but highly significant, see Georg Junge and Milad Zarinnejadan.
Calculated as:
\[ \text{KYC} = \text{INT} + \text{DIV} + \text{SPR} \]
\[ \text{KYNC} = \text{capital income of the noncorporate sector}. \]
It is assumed that the capital income component of the noncorporate sector is a proportion of the total entrepreneurial income of the noncorporate sector:
\[ \text{KYNC} = \left( \frac{\text{INT} - \text{DIV}}{\text{REM} + \text{DIV} + \text{INT}} \right) \times \text{PR}. \]

\[ s(l) = 1 - s(k) \]
\[ \text{TAX} = \text{total tax revenue deflated by the GDP deflator, Annuaire statistique de la Suisse, various issues.} \]
\[ \text{GDP} = \text{real gross domestic product}. \]
\[ \text{Dln (KLP)} = \text{Dln (GDP)} - (s[k] \text{Dln [K]} + s[l] \text{Dln [L]}) \]
\[ \text{Labor productivity (Table 1)} = \frac{\text{GDP}}{L} \]
\[ \text{Capital-labor ratio (Table 1)} = \frac{K}{L} \]

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Annuaire statistique de la Suisse, various issues.

**Publications:**

Summary

The Impact of Swiss Taxation on Economic Growth

Using a simple time series regression model this paper examines the direct impact of the Swiss tax burden on Swiss economic growth and rates of factor productivity. Though the data indicate a negative relationship between tax burden and the growth potential of the economy, they do not support the hypothesis that the relationship is significant.

Zusammenfassung

Der Einfluss der Steuern auf das Wirtschaftswachstum in der Schweiz

Dieser Artikel untersucht anhand eines einfachen Zeitreihenmodells den direkten Einfluss der schweizerischen Steuern auf das schweizerische Wirtschafts- und Produktivitätswachstum. Obwohl eine negative Beziehung zwischen der Steuerlast und dem Wachstumspotential der Wirtschaft zu bestehen scheint, unterstützen die Ergebnisse nicht die Hypothese, dass diese Beziehung signifikant ist.

Résumé

La répercussion de la fiscalité sur la croissance économique en Suisse

A l'aide d'un modèle de régression simple sur des séries temporelles, cet article examine l'effet direct de la charge fiscale sur la croissance économique et la productivité des facteurs en Suisse. Bien que les données suggèrent une relation négative entre la charge fiscale et le potentiel de croissance de l'économie, elles ne confirment pas l'hypothèse que cette relation est significative.