FISCAL POLICY AND GROWTH: THEORETICAL BACKGROUND

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1.1 Government expenditures and revenues

Fiscal policy is generally believed to be associated with growth, or more precisely, it is held that appropriate fiscal measures in particular circumstances can be used to stimulate economic development or growth (Barro, 1990; Barro and Sala-i-Martin, 1992; Cashin, 1995; Easterly and Rebelo, 1993; Engen and Skinner, 1992; Tenzi and Zee, 1996).

In general, government's expenditure can have positive impact on growth through two main channels: through increasing the quantity of factors of production and thus causing increase in output growth,[1] and indirectly through increasing marginal productivity of privately supplied factors of production[2] (Barro and Sala-i-Martin, 1992). However, is should kept in mind that public expenditures such as investments in infrastructure have diminishing marginal returns, thus there is an optimal ratio of governmental over private spending beyond which public expenditures become inefficient[3] (Eken, *et al*. 1997).

Empirical evidence linking public expenditures and growth is, to some degree mixed. Generally, the empirical literature finds an inverse relationship between government spending and growth (e.g. Landau, 1983; Koester and Kormendi, 1989; Engen and Skinner, 1992; Levine and Renelt, 1992; Devarajan, *et al*. 1996), but there seems to be a positive relationship between the increase in expenditure (i.e. change) and the growth rate (see e.g. Easterly and Rebelo, 1993).

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[1] Examples of expenditures in this category are public investment in infrastructure and investments in public enterprises.

[2] Expenditures that indirectly stimulate growth are e.g. investments in education, health and other sectors affecting human capital accumulation.

[3] In this context, aside of having positive effect on growth, "efficient" public expenditures must either have a public good character or address some other market imperfection, e.g., indivisibilities or finance constraints (Eken, *et al.* 1997).

The relationship between government revenues and output growth is found to be significant, where government revenues indirectly affect the supply and demand for capital and labour (Milesi-Ferreti and Roubini, 1994; Xu, 1994). The relationship between taxes, the main government revenue-generating source, and growth is generally found to be negative, though it is necessary to carefully analyse the positive indirect effects taxes might have on growth through increased public expenditures. The most negative effect on growth tends to associated with taxes imposed on physical or human capital,[4] but trade taxes such as tariffs can also decrease output growth through increasing the price of capital or intermediate goods.

There is a general agreement in the literature that the level of taxes negatively affects growth and that tax-caused distortions must be kept to a minimum by shifting the burden of taxation from investment or international trade to domestic consumption, otherwise fiscal adjustment strategies are likely to be ineffective (Eken, *et al.* 1997).

1.2 The role of fiscal policy in economic theory

The role of fiscal policy in economic development occupies an important place in economic research and economic theory. Traditional role of fiscal policy in the classical economic theory is considered to be in fostering sustainable long-term growth through carefully designed tax systems and spending programmes (Hemming, *et al.* 2002). More recent literature, however, places increasing weight to the role of expansionary fiscal policy and its potential role in stimulating economic growth (see e.g. Giavazzi and Pagano, 1990). Much of the theoretical debate centres around the effects of fiscal expansions on growth where the classical Keynesian theory expects this effect to be positive, and vice versa, fiscal contractions are in this tradition associated with lower growth and recessions. Nevertheless, evidence of expansionary fiscal contraction does exist (Giavezzi and Pagano, 1990), though this is in contradiction with the expected (positive) sign of the fiscal multipliers (Hemming, *et al.* 2002). It follows that effectiveness of any particular fiscal policy in stimulating

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[4] This effect is specially emphasised in the endogenous growth models where capital taxes act to reduce the constant steady state rate of return of privately supplied, reproducible factor of production, and hence the steady state growth rate (Eken, *et al.* 1997).

growth (or economic activity through e.g. stimulating investment) will depend on the magnitude and sign of the fiscal multipliers.

1.3 The demand-side

Fiscal policy aiming at stimulating growth through increased spending rests on the assumption that government's spending will stimulate private sector spending and thus induce growth through the multiplier effect.[5] The Keynesian view, resting on the belief that propensity to consume increases with income but at a lower rate (hence the multiplier effect through increased savings), holds that the larger is the increase in consumption, the larger the multiplier. This assumes price rigidity and excess capacity, which together imply that aggregate demand determines outcome. In the Keynesian theory fiscal expansion, therefore, has a multiplier effect on aggregate demand and hence on outcome. Furthermore, the Keynesian theory implies that the multiplier is greater then one (i.e. marginal propensity to save is greater then marginal propensity to consume) and it is larger for spending increase then for tax reductions (Hemming, *et al.* 2003).

However, fiscal expansions can have a negative feedback on output through crowding-out[6] due to induced changed in interest rates and the exchange rate. The stronger is the negative effect of interest rates on investment, the higher will be the (indirect) negative effect of fiscal expansion (through increased borrowing that raises

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[5] The "multiplier" is the ratio of an induced change in the equilibrium level of national income to an initial change in the level of spending. The "multiplier effect" implies that a change in the rate of spending will result in a more then proportionate change in national income. Under the assumption that all income is either consumed or saved, the multiplier is given by $M = (1 - \text{marginal propensity to consume})^{-1}$ or, equivalently, $(\text{marginal propensity to save})^{-1}$. As the magnitude of the (positive) fiscal multiplier measures potential effectiveness of fiscal expansion, it immediately follows that the larger the marginal propensity to consume, the larger the multiplier, hence the empirical relationship between income and consumption is crucial in designing and evaluating fiscal policy.

[6] "Crowding-out effect" exists when an increase in government's expenditure has the effect of reducing the level of private sector spending. The crowding-out occurs when an increase in government expenditure raises real national income and output which in turn increases the demand for money with which greater volume of goods and services is purchased. This causes an increase in the equilibrium interest rate, which consequently reduces an amount of private investment. Note that the presence of the crowding-out effect depends on the sensitivity of investment on interest rates. It should be emphasised that crowding-out is considered to exert negative effect on growth on the basis of the assumption that investment positively affects growth.

interest rates) on investment. When international exchange is considered (i.e. in an open economy model), there might be additional crowding-out through appreciation of the exchange rate that is due to increased capital inflows induced through higher interest rates. Subsequently, the external current account deteriorates which offsets the increase in domestic demand induced by fiscal expansion. Both of these effects will have negative consequences for growth under the assumptions of a positive causal effect of investment on growth, and will be stronger the stronger is the negative effect of interest rates on investment. On the other hand, the crowding-out effect will be smaller the larger is the dependence of investment on income. In addition, crowding-out will be smaller the smaller is the dependence of money demand on interest rates and the greater is its dependence on income.

In this context, the relationship between the exchange rate and prices is particularly important. The extend of crowding-out with flexible exchange rate will be smaller the greater is the response of domestic prices to the exchange rate since the appreciation of the exchange rate will then lower domestic prices.[7]

New-Keynesian theories, specially the rational expectation school, place much smaller emphases on the difference between the long- and short-run effects of fiscal policy. Thus, permanent fiscal expansion can be expected to cause crowding-out through influencing expectations of interest rates and exchange rate persistence (see e.g. Krugman and Obstfeld, 1997). Another consequence of the rational expectation view is the relationship between consumption and permanent income as opposite to current income from the classical Keynesian theory. Namely, consumers are here considered fully rational optimisers of their life-time average income (i.e. permanent income) thus not changing their consumption in response to changes in current income (e.g. windfall gains). This causes "Ricardian equivalence" between taxes and debt, which in its extreme form implies that a reduction in government's savings that is due to a tax reduction is entirely counter-balanced with an increase in private savings, hence the aggregate demand remains unchanged.[8] Increase in private savings might also result due to precautionary reasons when firms and households face greater

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[7] In case the exchange rate is fixed, this effect will be the opposite.
[8] This situation implies a zero multiplier.

uncertainty because of the government's actions, which in turn can reduce fiscal multipliers and even turn them negative.

The crowding-out effect might be additionally magnified if government's spending appears un-reversible or uncontrollable, hence if fiscal policy is not perceived as credible by the private sector. In such case, fiscal expansion could be perceived as inflatory and thus crowding-out effect through negative influence of interest rates on investment (and hence indirectly on growth) will be stronger. In such circumstances a credible temporary increase in government's spending and/or tax reduction will have stronger positive effect on growth due to smaller risk of unsustainable budgetary deficits.

1.4 The supply-side

The short-run effects of the fiscal expansions affecting primarily the demand-side or aggregate demand are likely to be ineffective when the economy is already operating at the full capacity and when short-term increases in productive capacity are not feasible. In such situation, expansionary fiscal policy results in crowding-out and thus has no positive effect on growth. In fact, fiscal expansions would then most likely have negative effect on growth through increased interests rates, though this further depends on the relationship between interest rates, investment, and growth.

Generally, capacity constraints can be eliminated only from the supply-side and such policies must be long- rather then short-run. Under rational expectations, due to anticipated long-run effect on growth, supply-side fiscal policy can also have short-run effects on aggregate demand; hence in such case increase in government's spending and/or tax reductions will also increase fiscal multipliers. Therefore, the key factors affecting potential effectiveness of short-term fiscal policy are the effects of changes in labour income taxes on labour supply and the effects of changes of profit taxes on savings and investment (Hemming, 2002).

The supply-side fiscal policy bares additional importance in new classical theories. Namely, as the new classical models assume efficient markets, output growth can only be the result of supply-side shocks and should be uncorrelated to the aggregate

demand. Thus, under rational expectations, fully anticipated fiscal policy targeted at aggregate demand but not at supply will have no effect on growth either in short- or long-run (see e.g. Lucas, 1975; Sargent and Wallace, 1975; Lucas and Stokey, 1983; Chari and Kehoe, 1998). It follows that the only effective fiscal policy is the one that is entirely unanticipated, and this can be only possible on the supply-side.

1.5 Effectiveness of fiscal policy: Policy implications

1.5.1 Empirical findings

Empirical literature on the effects of fiscal policy with special relevance to developing and transitional countries is far more sparse than the one focusing on western countries. Hemming (2002) gives a useful summary of the empirical findings covering the most recent work in this area. Gupta, *et al.* (2002) reports the findings from a study of the impact of fiscal adjustment and expenditure composition on growth in the short-run using data on 39 developing countries. He finds that:

- A 1% point reduction in the deficit-to-GDP ratio results in an average increase in per capita real growth of 0.25% to 0.5% in the short-run;
- Consolidation based on cuts in current expenditure has a bigger growth impact then those based on revenue increases and cuts in capital spending;
- Adjustment resulting in a reduction in domestic financing have around 1.5 times the effect on growth as those based on reductions in external and domestic financing;
- Typical Keynesian effects of fiscal policy are dominant.

Haque and Montiel (1991) in the sample of 31 developing countries find contractionary short- and medium-run effects of increased government spending and no long-run effect. They find that output dynamically depends on the interests rates where an initial increase in interest rates crowds-out output, which then gradually returns to its steady-state. Haque, *et al.* (1991) on the basis of simulations and theoretical analysis conclude that temporary increase in government spending financed by external borrowing initially crowds-out output but in the subsequent periods both output and inflation are positively affected. They also find that externally founded government spending is bolstered by monetary expansion and a negative

relationship between interest rates and investment. Using data from 29 developing countries, Haque, *et al*. (1991) analyse the relationship between discrepancy between actual and potential output and policy variables within a modified monetary model that treats both inflation and output endogenously.

Fiscal multipliers resulting from government spending were found to be larger for developing countries then for the industrial countries (Kandil, 1991). Kandil (1991) finds that marginal propensity to consume and marginal propensity to invest are larger for developing countries (using a panel with 21 developing and 18 developed countries). In addition, Kandil (1991) finds that interest elasticity of money demand is lower in developing countries, but there is no difference between the two groups of countries in respect to income elasticity. Kandil (1991) and Owoye, *et al*. (1995) find that developing countries monetary policy is more effective then fiscal policy in stimulating output growth.

A closely relates stream of literature looks into the relationship between fiscal deficits and interests rates and between interest rates and investment. Fiscal deficits were found to be related to real interest rates in developing countries, though the sign of the effect differs across countries (Agénor and Montiel, 1996). Negative relationship between fiscal deficits and real interest rates was also found by Easterly, *et al*. (1994) in a large sample of developing countries. The relationship between interest rates and investment is central for the assessment of the fiscal policy effectiveness, as the crowding-out effect of fiscal expansion will depress output growth through increased interest rates. However, it can be argued that in developing and transitional countries, because investors are likely to be credit-constrained, the expected relationship between interest rates and investment could be positive and thus fiscal expansion might not cause crowding-out through interest rates but further stimulate output growth. An early evidence in support of this argument was given by Blejer and Khan (1984) who find that investment in developing countries inversely relates to the quantity of financing, while it is not significantly linked to interest rates. This finding is also confirmed by Rama (1993) and Easterly, *et al*. (1994), though some evidence to the contrary was reported by Kandil (1991).

Empirical findings on the share of liquidity-constrained consumers in developing countries indicate significantly higher figures from industrialised countries. Haque and Montiel (1989) estimated that, on average, 40% of consumers in developing countries are liquidity-constrained. These findings further imply likely inapplicability of Ricardian equivalence in most analysed developing countries (see Haque and Montiel, 1989; Khalid, 1996; Haque, *et al*. 1990; Masson, *et al*. 1995; Corbo and Schmidt-Hebbel, 1991; Giavazzi, *et al*. 2000).

1.5.2 Policy factors and alternatives

The choice of the appropriate fiscal policy is context dependent and must reflect particular situation in a specific country. The main policy question is whether to chose a fiscal expansion or a fiscal contraction, while within each orientation various alternative policy measures are available. According to Hemming, *et al*. (2002: 37), the key questions that need to be asked when considering fiscal policy options are the following:

- What is the source of a downturn in economic activity?
- How responsive are interest rates, the exchange rate, and prices to a fiscal expansion?
- Are accompanying policies supportive?
- Is a fiscal expansion likely to be permanent and is government debt sustainable?
- What is the composition of a fiscal expansion or contraction?
- What influences the behaviour of households and firms?

Table 1.
Fiscal policy factors

Fiscal policy	Assumptions	Policy implications
Fiscal expansion	• The economy is not operating at full capacity • Productive capacity can be increased in the short run • Propensity to consume is a function of current income • There is excess capacity • Investment positively affects growth • Investment is not excessively sensitive to interest rates • Money demand is positively affected by income • The effect of interest rates on money demand is relatively weak • Exchange rate is flexible • Domestic prices are sensitive to exchange rate • Fiscal policy has public credibility • Increased government spending does not substitute for private spending • Government debt is low • Government does not face financing constraints • There is an accompanying monetary expansion with limited inflationary consequences	• Multiplier is greater then one • Multiplier increases with responsiveness of consumption to current income • Multiplier is larger for spending increase then for a tax cut • Crowding-out might result if the negative feedback through increased interest rates is excessively high • Crowding-out will be smaller with flexible exchange rate when domestic prices are sensitive to exchange rate movements
Fiscal contraction	• The economy is operating at full capacity • Productive capacity cannot be increased in the short run Propensity to consume is a function of permanent income and uncorrelated with current income • Investment positively affects growth • Investment is sensitive to interest rates • The effect of interest rates on money demand is strong and negative	• Fiscal expansion will cause crowding-out • Permanent fiscal policy will reduce consumption • There will be difficulties with sustaining debt • Risk premia on interest rates are large • Credible fiscal contraction might cause large drop in interest rates • Precautionary saving might result as a consequence of increased uncertainty due to expansionary fiscal policy

1.6 Regional development and fiscal policy

1.6.1 The trade-off between regional national development policies

The issue of using fiscal policy to foster regional development and thus bridge regional development gaps has been long present in the economic literature. The importance of regional policy was strongly emphasised already by Higgins (1973) who stated that:

"Measures to reduce regional gaps, far from being a "luxury" to be afforded when things are otherwise going well in the country, are the essence of a policy to accelerate growth, reduce unemployment and maintain price stability. For developing countries, where efforts to accelerate growth are inhibited by fear of aggravating inflation, reduction of regional disparities may well be the *sine qua non* of successful development policy." (Higgins, 1973: 177)

Later literature on the importance of regional policy questioned Higgins' conclusions on the grounds of the trade-off between aggregate national efficiency and interregional equity (Hewings, 1978). Specifically, because the lower national unemployment rates tend to be linked to higher inflation rates "policies to reduce the regional variability of unemployment should lead, ceteris paribus, to higher rates of inflation" (Hewings, 1978: 258).

Before further considering the regional-national trade-offs, however, it is important to analyse the direction and speed of development across particular regions. This is important because it might turn out that special regional development policy might be unnecessary (e.g. if the less developed regions grow faster then the developed regions and if their growth rates suggest sufficiently fast convergence). On the other hand, regional convergence analysis can indicate the most problematic regions thus requiring highest policy priority by taking into account not only the present state of development, which in itself provides only partial information of relevance for the regional development policy, but also the development dynamics.

At the heart of the problem is thus the issue of regional growth rates and speed of convergence, namely, the question of whether the regions lagging in development are converging toward the development level of the contemporary developed regions and, if so, how fast? If the current development level of certain regions is considerably lower in comparison to the other regions it could be expected that these regions will growth faster then the more developed ones—a phenomenon known as β convergence[9] (see Barro and Sala-i-Martin, 1991; 1992a; 1992b; 1999). Closely

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[9] The β convergence will be estimated by $(1/T)\ln(y_{iT}/y_{i0}) = \alpha - [(1-e^{-\beta T})/T]\ln(y_{i0}) + u_{it}$, where yit is e.g. per capita income in region *i* at time *t*. If the intercept α is equal between war-affected

related concept is that of σ convergence,[10] which relates to cross-regional dispersion in the level of development (Easterlin, 1964; Borts and Stein, 1964; Streissler, 1979, Barro, 1984; Baumol, 1986, Dowrick and Nguyen, 1989; Barro and Sala-i-Martin, 1991; 1992a;b).

These two phenomena have high relevance for the growth-oriented policy. On the one hand, if β convergence is present, fast enough, and if it is simultaneously accompanied by σ convergence, then it would suffice to stimulate growth of the overall national economy using monetary and fiscal instruments and no regional fiscal policy would be needed. In such case, it will be relevant to investigate whether and how monetary and fiscal policy instruments can be used to stimulate the overall growth of the economy. The relevant issues for monetary policy concern the relationships among the principal macroeconomic quantities such as money supply, inflation and output growth where the primary questions ask whether such relationships exits; are they stable; are they short or long run and what policy implications they carry? For example, controllability of inflation by monetary policy in the sense of using monetary growth as policy instrument by the central bank requires that monetary growth can be fully controlled, which in turn requires that the relationship between monetary growth and future inflation is known to the policy makers (see e.g. Cabos and Siegried, 2001). On the other hand, if convergence is lacking or if the regional development level is diverging, there will be strong reasons for considering regional growth-stimulating measures. Examples of such policies include regional fiscal measures (e.g. tax reductions) and government expenditures (e.g. investments in infrastructure). Therefore, conditional on the dynamics of the regional growth rates the Higgins's (1973) "measures to reduce regional gaps" might be unnecessary if the underdeveloped regions are converging in development with sufficient speed.

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and other municipalities and if $\beta > 0$ it would follow that war-affected areas growth faster than the more developed areas, thus converging in development level (see Barro and Sala-i-Martin, 1999).

[10] The σ convergence can be tested by estimating $\sigma_t^2 = \sigma_u^2(1-e^{-2\beta})^{-1} + [\sigma_0^2 - \sigma_u^2(1-e^{-2\beta})^{-1}] \cdot e^{-2\beta t}$, where $\sigma_u^2 = Var(u_{it})$ and $\sigma_0^2 = Var\ln(y_{i0})$, with the assumption that $\forall t, \sigma_{ut}^2 = \sigma_u^2$. Decreasing σ_t^2 over time implies σ convergence, noting that σ_t^2 is the cross-regional variance of $\ln(y_{it})$ at time t.

A further important input for designing regional fiscal policy (as well as evaluating the appropriateness of the already implemented policies) concerns the effects of regional fiscal policy on regional income and employment. How much will the regional income increase per each currency unite of regional investment? This question was addressed already by Archibald (1967) who argued that in the United Kingdom "…the change in a region's income due to one pound of Treasury expenditure of the public works type is in all probability less then one pound" (p. 22).

1.6.2 Fiscal policy alternatives

Fiscal policy instruments, such as tax incentives, aimed at decreasing regional disparities are essentially means of expanding aggregate demand because tax incentives for investment merely concentrate additional demand in the capital goods sector (Kesselman, *et al*. 1977). Early examples of fiscal instruments through which the government aims to achieve a lerward shift in the Phillips curve include the *selective employment tax* (SET) and the *regional employment tax* (RET) introduced in the United Kingdom in the sixties. The SET and RET were distributed per man employed and thus taxed the factor labour. Hutton and Hartley (1968) proposed a regional payroll tax that is a function of the target national unemployment rate and the local unemployment rate, as an alternative to the above two tax forms.

Starting from the assumption that the objective of a regional policy include a reduction in the regional differentials in unemployment rates, an increase in activity rates in the high unemployment areas, a decrease in migration from the underdeveloped areas, and a reduction in the excess demand for labour in the developed regions, Hutton and Hartley (1968: 418) outlined the following criteria a regional fiscal policy should satisfy:

- The tax must reduce unemployment rates in the underdeveloped areas;
- The tax must reduce the excess demand for labour in the developed areas;[11]
- The tax needs to be related to both regional and national unemployment rates;
- The tax system should be the least-cost method of achieving policy objectives

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[11] Hutton and Hartley (1968) referred to UK's Midlands and South-East as developed areas.

The main policy choice in respect to tax reductions is the criteria for awarding tax credits (i.e. reduction). Two general approaches are present in practice and are broadly discussed in the literature—investment tax and employment tax credits. Generally, both tax forms aim to affect the price of labour and thus stabilise the economy.

Analogous to employment tax credits in the policy practice two other terms with the same meaning are in use, "employment subsidies" and "wage subsidies". In practice, wage-subsidies proved to be more efficient then capital or output subsidisation and also superior to tariff protection. Subsidisation of wages is generally used in policies aimed at fostering development of underdeveloped areas; particular urban sectors of a developed country; income maintenance; and job training of low-wage workers. Tax variants such as regional employment premiums[12] or selective employment tax provide labour incentives by location and industry, respectively. Regional employment tax credits provide tax reductions to firms that are increasing employment levels.[13]

Employment tax credit policy might provide tax reduction equivalent to a specified amount of per man-hour employed, where subsidy rates on man-hours or wage bill is treated directly, rather then through the tax-credit rule (see Kesselman, *et al.* 1977). It can be expected that such employment tax credit policy would lower the price of labour to the firms and also lower the price of unskilled labour relative to the price of the skilled labour. Alternatively, employment tax credit can be equal to a specified percentage of wage bill of the firm, which could be administered through the reported tax return or social insurance data (e.g. through reductions in the social security contributions which employers are obliged to pay for each employee).

A "marginal" employment tax credit is a related measure that potentially might achieve greater employment increase by reducing taxes of the firms on the grounds of

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[12] United Kingdom is the best example of a country where employment premium was used in practice.
[13] Regional employment tax credits were used, e.g., in Italy, Sweden, Finland, and Germany. A version of employment tax credits with a noted training incentive was also introduced in the USA under the Job Opportunities in the Business Sector AFDC Work Incentive Program.

their contribution to increasing employment.[14] The employment tax credit and marginal employment tax credit both subsidise new purchases of the subsidised input, hence investment flow becomes analogous to marginal (i.e. additional) employment by the firm. This can be more efficient then investment-based incentives if the firms adjust their labour inputs faster then their capital inputs.

Theoretically, if the firms are assumed to be cost minimising and facing perfectly elastic input supplies, an exogenous change in effective input prices will stimulate the firm to chose a new cost-minimising mix of inputs for the given output. This implies that the average cost net of the credits must be lower in the presence of an employment tax credits, however in case of marginal employment tax credits firms will find it beneficial only if its employment without the available credit would have exceeded its current base or if its employment without the credit would have been less then the base. Contrary, if the base is sufficiently large, the firm will not find marginal employment tax credit beneficial.

Additionally, the tax credit policy has potential implications for inflation through changes in the average price of output. It is likely that employment tax credit and marginal employment tax credit policies will have a negative effect on inflation through reducing output price.

Table 2.
Alternative fiscal policies

Policy measure	Assumptions	Policy implications
Profit-tax reductions	• Higher after-tax profit will stimulate investment through larger overall profit re-investment • Investment positively affects growth	• If Firms re-invest after-tax profit then tax cuts will stimulate investment
Employment tax credit: • Tax reduction on the basis of man-hours employed • Tax reduction on the basis of the percentage of wage bill of the firm	• Firms adjust their labour inputs faster then capital inputs • The average cost net of the credits is lower under the employment tax credit policy • Output is responsive to prices	• Employment tax credits will be more efficient then investment tax credits of equal cost only if distributional effects arise • Increase in employment resulting from employment tax policy alone will be small if output is unchanged

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[14] A criteria for tax reduction can be based on the amount of man-hours increased over some specified based such as a last year figure or a related measure of firm's historical performance.

Marginal employment tax credit	• Firm's employment without employment tax credit policy is lower then the base employment magnitude	• Marginal employment tax credits will be more efficient then investment tax credits of equal cost only if distributional effects arise
Investment tax credit	• Firms adjust their capital inputs faster then labour inputs • Output is unresponsive to prices	• Investment tax credits are preferred when distribution effects are unlikely to be present

Currently in Croatia, one of the policy measures taken by the central government with the aim of stimulating economic growth and development of the war-affected regions is a simple form of regional fiscal policy based on general profit-tax reductions for business entities from these regions. There are two implicit assumptions behind this policy. Firstly, it is assumed that convergence in development level is not present or too slow, and secondly, it is assumed that general regional profit-tax reductions will result in higher rate of investment in the lower-tax regions and thus stimulate convergence in regional development level. Subsequently, it is expected that such policy will bring up the formerly war-affected and underdeveloped regions to the level of the other regions.

However, there is a lack of analytical studies that can back up either of these two assumptions, so the currently implemented policy is not research-based and thus its expected outputs are dubious. In the case of slow convergence in regional growth rate regional fiscal policy might be a reasonable choice. Nevertheless, it is questionable whether regional profit-tax reductions will achieve the policy aim, which is accelerated growth of the war-affected regions, or whether different or more elaborate policy (see e.g. Table 2) will be needed.[15]

Aside from the above discussed tax policies (Table 2), one alternative, for example, might be to implement a more elaborate fiscal policy that would allow different sectoral and firm-type treatment (e.g., preferentials for start-ups), refined regional

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[15] Namely, general tax reductions aimed at specific region cannot alone assure desired effects. Their effectiveness depends on characteristics and behaviour of the enterprises in the targeted areas, primarily their tendency for profit-share re-investment. It is widely believed, for instance, that Croatian service sector re-invests smaller profit-share then the industrial sector and thus larger after-tax profit is mainly spent on consumption expenditure thus having no effect on economic development and growth. Indirectly, however, reduced government's income from profit taxes will shrink budgetary capabilities to provide underdevelopment subsidies and thus indirectly negatively affect development of these areas.

differentiation based on detailed regional development assessment and imposition of tax reductions on reinvested profit share. Such policy would be more complex and more difficult to implement thus requiring detailed analytical background studies of the effects and likely consequences of alternative fiscal measures. Analysis of this kind, however, is not straightforward and simple to carry out. Namely, we cannot follow the effects of various alternative policies through time since there is no appropriate time series data. On the contrary, it is necessary to analyse firm behaviour and characteristics closely linked to regional disparities and varying development level and predict their likely response on alternative fiscal measures, thus allowing finer tailoring of growth-oriented regionally-differentiated fiscal policy.

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