



***The World's Largest Open Access Agricultural & Applied Economics Digital Library***

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

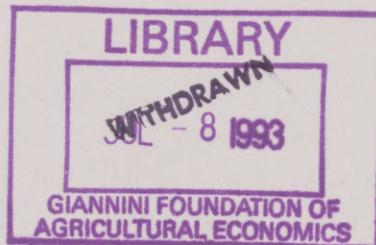
AgEcon Search  
<http://ageconsearch.umn.edu>  
[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from AgEcon Search may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

*No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.*



INSTITUTE  
FOR  
POLICY  
REFORM



### Working Paper Series

The objective of the Institute for Policy Reform is to enhance the foundation for broad based economic growth in developing countries. Through its research, education and training activities the Institute encourages active participation in the dialogue on policy reform, focusing on changes that stimulate and sustain economic development. At the core of these activities is the search for creative ideas that can be used to design constitutional, institutional and policy reforms. Research fellows and policy practitioners are engaged by IPR to expand the analytical core of the reform process. This includes all elements of comprehensive and customized reforms packages, recognizing cultural, political, economic and environmental elements as crucial dimensions of societies.

---

1400 16th Street, NW / Suite 350  
Washington, DC 20036  
(202) 939 - 3450

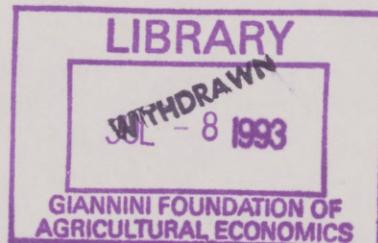


INSTITUTE  
FOR  
POLICY  
REFORM

IPR61

*Tax and Expenditure Policies in Hungary*

David M. Newbery

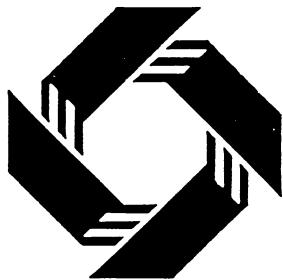


*Working Paper Series*

The objective of the Institute for Policy Reform is to enhance the foundation for broad based economic growth in developing countries. Through its research, education and training activities the Institute encourages active participation in the dialogue on policy reform, focusing on changes that stimulate and sustain economic development. At the core of these activities is the search for creative ideas that can be used to design constitutional, institutional and policy reforms. Research fellows and policy practitioners are engaged by IPR to expand the analytical core of the reform process. This includes all elements of comprehensive and customized reforms packages, recognizing cultural, political, economic and environmental elements as crucial dimensions of societies.

---

1400 16th Street, NW / Suite 350  
Washington, DC 20036  
(202) 939 - 3450



INSTITUTE  
FOR  
POLICY  
REFORM

IPR61

*Tax and Expenditure Policies in Hungary*

David M. Newbery

*Department of Applied Economics  
University of Cambridge*

*and*

*Senior Research Fellow  
Institute for Policy Reform*

April 1993

Tax and expenditure shares in Hungary are high compared with market economies, and tax revenues have been falling with tax reform, marketisation, and the collapse of CMEA trade. Western observers argue that cuts in taxes and expenditures are desirable. Optimum tax theory shows that a narrowing of the tax base provides the main case for tax reductions. Hungary's high foreign debt and the undesirability of cutting some expenditures make cuts in other expenditures even more urgent. The paper argues for broadening the tax basis, tightening compliance, and reducing the tax element in social security contributions.

# Tax and Expenditure Policies in Hungary

David M Newbery  
Department of Applied Economics  
Cambridge, UK

## NON-TECHNICAL SUMMARY

The economies of East and Central Europe (ECE) differed from comparable market economies in several important respects at the start of their transformation. They had a higher share of tax and expenditure to GDP than market economies at the same level of development, and their tax and expenditure patterns differed. They had a more egalitarian distribution of personal income, both before and after taxes and transfers. On the tax side, they generated a far larger share of total revenue from taxes on enterprises, and a relatively small fraction from personal income taxes. On the expenditure side, subsidies to enterprises were relatively more important, as was investment.

Hungary allocates roughly twice the expected share of GDP to General Public Services and Defence, and roughly half the expected share to health and education. Although social security and welfare expenditures do not appear out of line, transfers are twice the expected share, while investment is half that expected. What accounts for the different patterns and levels of expenditure in Hungary, and what political dynamic affects their evolution over time? Was it the case that the post-1956 Kadar economic policies contained within them the seeds of the destruction of the soviet-type economy, or was the disengagement of the USSR and subsequent free elections decisive in forcing systemic change? Hungary is probably the best ECE example in which to study the endogenous evolution of the budgetary and redistributive system towards a more western pattern.

Hungary's egalitarian income distribution can be accounted for in two quite different ways - the first as the outcome of an efficient system of implicit taxation designed to extract the maximum surplus for investment and other state activities, the second that it reflects an egalitarian concern for social welfare. At first sight, these two explanations seem violently opposed - the first designed to exploit workers, the second to sustain their social wellbeing. This ambiguity in interpreting the intentions of the government had political advantages for the Kadar government, and has been described as the two-sided Janus face of Hungarian socialism. On the one hand it allowed the appearance of continuity with the previous soviet-dominated era, while on the other it allowed the government to win social acceptance by orienting the surplus towards 'social consumption' and away from the more traditional communist goal of investment in heavy industrialisation ('goulash communism'). What caused the change of face?

High investments initially led to high growth rates, but the returns to investment fell, and with it the growth rate. One explanation would be that the tight labour market which required oligopolistic enterprises and expropriatory surplus extraction to hold down wages destroyed the information required to ensure efficient investment. Investment is pre-eminently a future-oriented activity, whose success will not be evident for some time. An

oligopolistic and expropriatory socialist state finds it almost impossible to reward successful investment decisions and penalise failures. If the state is to control the surplus, average rates of taxation must be high. High average taxes mean high marginal taxes and poor incentives.

The disincentive effect of central planning was addressed by the 1968 reforms and the move to a more decentralised system. Decentralisation set up tensions between the enterprises and the central planning agency. The planners attempted to guide and control enterprises by taxes and subsidies, and controls over the use of the surplus. Managers used the system of social security and early retirement to subvert these controls and introduce flexibility into the use of labour. This response to the divergent objectives of centre and enterprise increased budgetary costs. Together with an overambitious investment programme, the resulting budget deficit translated into a growing international debt, and subsequent recourse to the IMF and World Bank. They provided external support for the sequence of reforms needed to continue progress towards the market economy. The tax reforms of 1988-89 were an essential part of this process, for their objective was to disrupt the bilateral bargaining relationship between enterprises and the government. One of the predictable (and predicted) consequences of this tax reform was that tax revenue would decrease, and require reductions in subsidies, both to consumers, and, more important, to enterprises. Another major consequence was that the tax system became more explicit and transparent to individuals, with two obvious effects. The first was to increase political pressure to reduce taxes (which were now seen to be rather high) and hence to reduce public expenditure, and the second was to increase the attraction of working in the private sector where opportunities for tax evasion are greater.

The paper examines the evolution of tax revenues and expenditures in considerable detail, and then asks how the desirable size of the budget might be expected to respond to systemic change. Optimal tax theory argues that the tax rate should depend on the inequality of skill distribution, the size of the inescapable level of non-redistributive public expenditure, the elasticity of substitution between taxed and non-taxed activities, and attitudes to inequality. The first might increase in the transition, arguing for higher taxes, but the last two might both move in directions arguing for lower taxes and a smaller budget. What, then, should happen to tax rates?

The political dynamic is pressing for lower taxes and expenditures, by mechanisms described in the paper. The main conclusion from this rather pessimistic analysis is that the case for reducing taxes is quite strong because of the extreme difficulty in ensuring an efficient and broad based tax system with high compliance. This in turn means that the pressure to cut expenditure is even higher. Given the difficulty of reducing expenditures, except in socially divisive or ethically unappealing ways, and given the inevitable erosion of the tax base through increased private activity and the fall in domestic demand, this strengthens the strong case for increasing the breadth of both direct and indirect tax bases, and tightening up tax administration to ensure compliance. At the same time there is a strong case for the government issuing indexed financial securities, and reforming social security to strengthen the link between contribution and pension, hence reducing the tax element. Sequencing the adjustment to a new form of mixed pension, part privately financed, but underwritten by the state, should also be addressed.

# Tax and Expenditure Policies in Hungary

David M. Newbery\*

Department of Applied Economics

Cambridge, UK

15 September 1992

(Revised 7 April 1993)

*Tax and expenditure shares in Hungary are high compared with market economies, and tax revenues have been falling with tax reform, marketisation, and the collapse of CMEA trade. Western observers argue that cuts in taxes and expenditures are desirable. Optimum tax theory shows that a narrowing of the tax base provides the main case for tax reductions. Hungary's high foreign debt and the undesirability of cutting some expenditures make cuts in other expenditures even more urgent. The paper argues for broadening the tax basis, tightening compliance, and reducing the tax element in social security contributions.*

## 1. Introduction

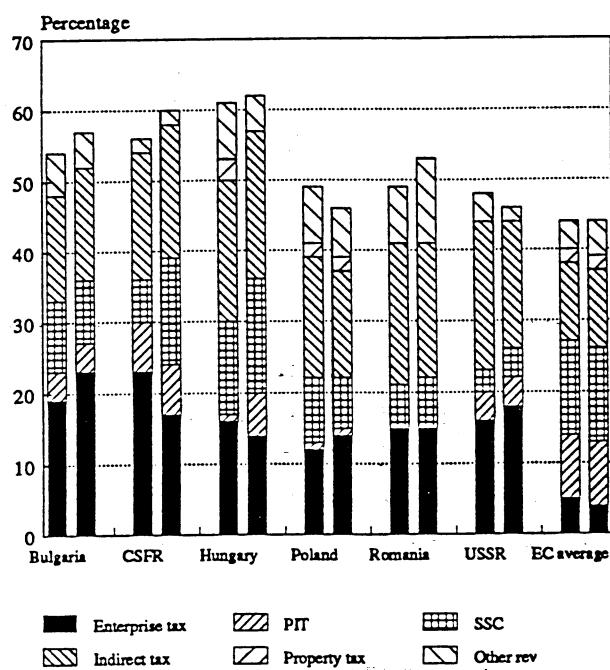
The transforming economies of East and Central Europe (ECE) differ from comparable market economies in several important respects. They have a higher share of tax and expenditure to GDP than market economies at the same level of development, and their tax and expenditure patterns differ in key respects. They also had a far more egalitarian distribution of personal income, both before and after taxes and transfers. On the tax side, they generated a far larger share of total revenue from taxes on enterprises, and a relatively small fraction in personal income taxes (PIT). On the expenditure side, subsidies to enterprises were relatively more important, as were expenditures on capital for investment, than in market economies.

Fig. 1 compares the sources of tax revenue in six ECE countries and for the EC as a whole for 1985 and 1989 (before the collapse of Communism).<sup>1</sup> Indirect taxes also appear relatively important in ECE countries, though their incidence in many cases makes them effectively act as direct taxes on enterprises. Hungary and Czecho-Slovakia (CSFR) stand out as having taxes amounting to more than 50 per cent of GDP, though as noted in the Appendix, accounting conventions in ECE countries tend to overstate both revenue and expenditure shares (perhaps between 8 and 11 per cent of GDP in Hungary - see Appendix). The effects of the 1988-89 tax reforms in Hungary appear as a fall in enterprise tax, and a dramatic increase in PIT. Fig. 2 compares general government expenditures for the same countries and years, demonstrating the importance of subsidies and transfers to enterprises. Expenditures on goods and services also appear to be rather high, though this may reflect double counting (see Appendix).

\* This paper was prepared under a cooperative agreement between the Institute for Policy Reform (IPR) and the Agency for International Development (AID), Cooperative Agreement No. PDC-0095-A-00-1126-00. Views expressed in this paper are those of the author and not necessarily those of IPR or AID.

<sup>1</sup> The data sources for the figures are described in the Appendix.

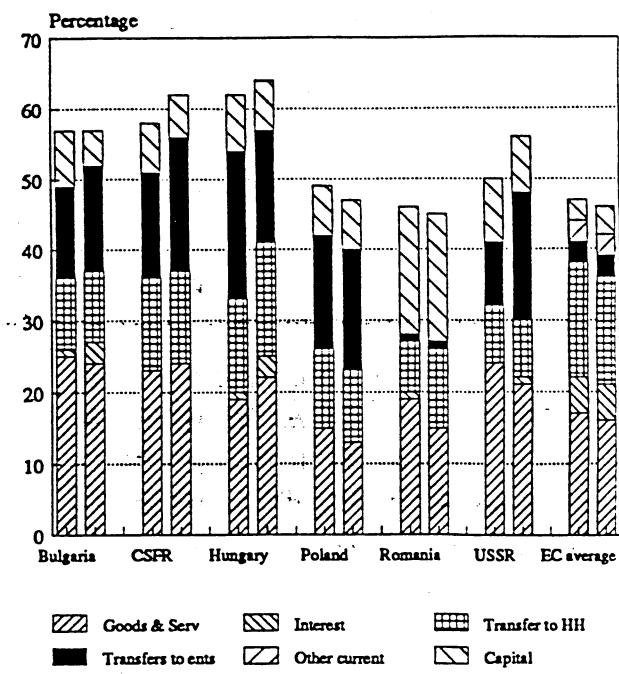
General Government Revenue 1985 and 1989  
Share of GDP/GNP



Kopits (1991); first col is 1985

Fig. 1

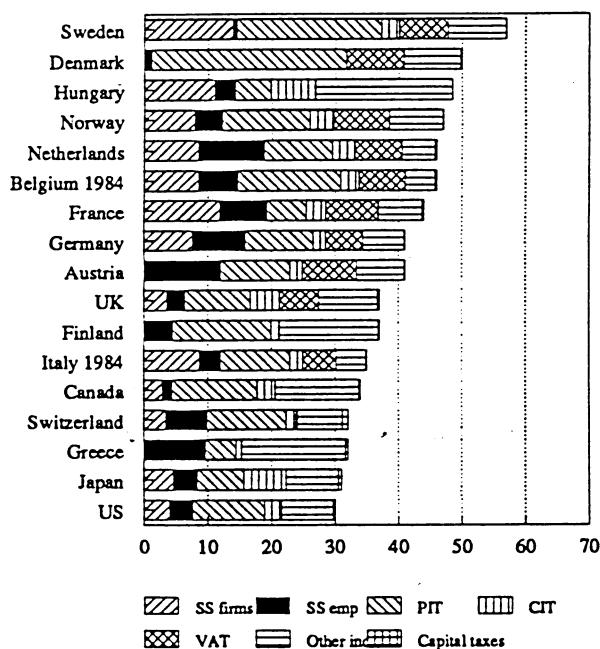
General Govt Expenditure 1985 and 1989  
Share of GDP/GNP



Kopits (1991); second col is 1989

Fig. 2

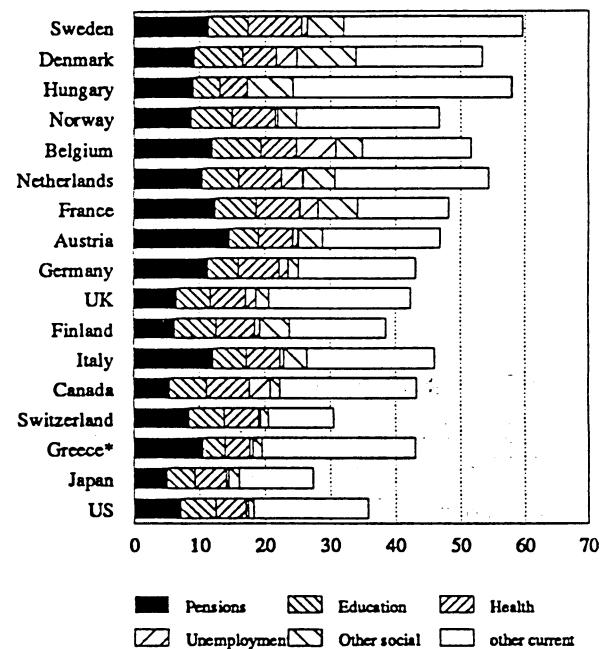
Taxes and social security 1989  
percent GDP at market prices



Economic Trends 1992 p122 OECD Tax.WK1

Fig. 3

Government current expenditure 1986  
percent GDP at market prices



World Bank (1991 2.1 p7) OECD Tax.WK1

Fig. 4

Fig. 3 compares tax and social security contributions in Hungary and 16 other OECD countries for which comparable data are available for 1989. Hungary ranks among the 'social welfare states' of Scandinavia in level, and has somewhat higher Corporate Income Taxes (CIT) than other countries. These figures are from a different source (OECD) than fig. 1 (and exclude non-tax revenue) and suggest (probably more accurately) a rather lower tax share. Hungary does not stand out as structurally so different, though 1989 is after the major tax reform designed to shift the tax system towards the western market model. Fig. 4 compares expenditure patterns for the same set of OECD countries and Hungary for 1986. Again, Hungary emerges as a country with a very high share of general government expenditure to GDP (and the figures exclude capital expenditures), though its expenditure pattern on social expenditures does not appear remarkable by OECD comparisons. Of course, Hungary is considerably poorer than all these countries except Greece, and so this may not provide the correct comparison.

**Table 1. Functional Expenditure Categories for Hungary 1975-7 to 1984-6  
International Expenditure Comparison Indices<sup>d</sup>**

Category	Table <sup>a</sup>	Year		
		1975-77	1978-80	1981-83
General Public Services	13 <sup>b</sup>			190.2
	16 <sup>c</sup>	228.1	236.5	181.5
Defence	13			156.2
	16	122.0	156.9	161.1
Education	13			35.3
	16	27.7	27.0	28.9
Health	13			57.7
	16	90.5	77.8	78.9
Social Security and Welfare	13			99.6
	16	104.3	121.7	104.7
				110.2

Source: Heller and Diamond (1990)

Notes: <sup>a</sup> Table number in Heller and Diamond (1990)

<sup>b</sup> Table 13 uses pooled structural expenditure functions

<sup>c</sup> Table 16 uses structural expenditure functions for 1975-7, 1978-80, 1981-3, 1984-6

<sup>d</sup> Ratio of actual share of expenditure in GDP to predicted share, as percentage

To see whether Hungary's expenditure pattern is unusual when compared against comparable countries, one may compare it against the bench-mark constructed by Heller and Diamond (1990) based on data for 95 developing countries, using the 1988 edition of the IMF *Government Finance Statistics Yearbook*. Their procedure is to estimate an equation for each category of expenditure, as described in the Appendix. The International Expenditure Comparison Index for a particular expenditure category is then the ratio of the actual share in GDP to that predicted by the functional equation. Thus in

Table 1, using the pooled structural expenditure functions (given in Table 13 of Heller and Diamond, 1990) General Public Services in Hungary in 1981-83 were 190.2 per cent of that predicted. The figure immediately below it, which comes from the structural expenditure function estimated for that group of years and given in Table 16 of Heller and Diamond, is 181.5 per cent. Thus Hungary spent almost twice as much as a share of GDP as one might expect on the basis of its economic characteristics measured by the set of dependent variables chosen.<sup>2</sup> Table 2 gives a breakdown of government expenditure by economic category using a rather different set of explanatory variables to predict the expenditure levels.

**Table 2. Economic Categories of Expenditure for Hungary 1975-7 to 1984-6  
International Expenditure Comparison Indices<sup>d</sup>**

Category	Table <sup>a</sup>	Year		
		1975-77	1978-80	1981-83
Current Expenditure (7)*	14 <sup>b</sup>			191.2
	17 <sup>c</sup>	211.1	212.1	176.5
Capital Expenditure (10)	14			37.9
	17	25.0	25.1	34.0
Goods and Services (3)	14			88.8
	17	75.6	77.7	84.1
Wages (1)	14			87.9
	17	71.3	72.0	122.2
Other Goods and Services (2)	14			78.1
	17	58.5	60.3	73.3
Interest Payments (4)	14			42.0
	17	84.1	65.4	35.4
Subsidies and Transfers (5)	14			222.3
	17		273.8	209.8
Acquisition of Capital Assets (8)	14			26.0
	17	19.9	20.0	42.5
Capital Transfers (9)	14			72.6
	17	42.5	40.8	31.5
				40.8

Source: Heller and Diamond (1990)

Notes: <sup>a</sup> Table number in Heller and Diamond (1990)

<sup>b</sup> Table 14 uses pooled structural expenditure functions

<sup>c</sup> Table 17 uses structural expenditure functions for 1975-7, 1978-80, 1981-3, 1984-6

<sup>d</sup> Ratio of actual share of expenditure in GDP to predicted share, as percentage

\* refers to column number in Heller and Diamond, Table 6, p26. (7) = (3)+(4)+(5); (3) = (1)+(2); (10) = (8)+(9)

<sup>2</sup> The explanatory variables are listed in the Appendix. It should be noted that the explanatory power of the cross-section regression equations is quite low for both tables, as mentioned in the Appendix.

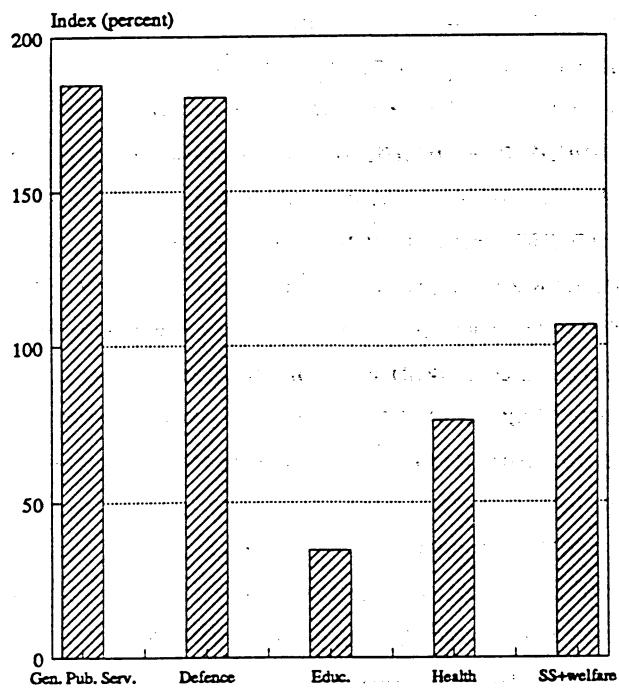
Table 1 (and fig. 5, which averages the four numbers for each category in the last two columns, and therefore measures an average index for 1981-86) suggests that Hungary's expenditure pattern is rather different than that of the sample of countries used in the cross-section comparison. General Public Services, as already noted, are roughly twice as high as would be predicted. This category includes financial administration, external affairs, justice, police, planning, and other aspects of general administration. Its main determinant is the ratio of other non-administrative government spending, so that its expected level in Hungary would be predicted to be high, but its actual level is considerably higher still. This has led the World Bank (1992a) to conclude that the lack of budget consolidation and the resulting double counting is likely to be concentrated in this category (and that of economic services). Kornai (1992, p6) takes the figures at face value and argues strongly for their reduction.

Defence expenditures are hard to predict and will be determined by other than economic factors, but it is noteworthy that health and education expenditures are lower than predicted, and that social security and welfare is roughly at the level to be expected. This is the more surprising when one realises that both education and health expenditures have been constrained by foreign debt in many countries, and this is predicted to have a negative effect on expenditure. Given the high level of debt in Hungary, the predicted expenditure levels would have been reduced, and the low ratio of actual to predicted expenditure suggests an even lower level of expenditure on these items.

The evidence in Table 2 (and fig. 6, which provides the same average index for 1981-86 as fig. 5) needs careful interpretation. The explanatory variables are the shares of expenditure by functional classification in the budget, and so one cannot interpret a high level of current expenditure relative to predicted expenditure as evidence that Hungary has a high absolute level of current expenditure, only that it is higher than would be expected given the composition of the budget. That said, it is noticeable that Hungary appears to under-invest relative to expectation. The reason for the high level of current expenditure is entirely due to the high level of subsidies and transfers, and these would normally be determined by the levels of expenditure on education and social security and welfare. As these were below expected for Hungary (see Table 1) it is perhaps not surprising that the subsidies and transfers were higher than predicted, suggesting that Hungary may achieve the same allocation of resources to social welfare by rather different mechanisms, relying less on the direct provision of the traditional services of health and education. This reminds us that the diagnostic value of these international comparisons is primarily one of drawing attention to differences in reported categories, which may in turn may be more due to differences in the operation of the system of transfers and expenditures than in the actual level of resource allocation.

The other striking difference between the ECE countries and market economies is the highly egalitarian distribution of both original personal incomes (before taxes and

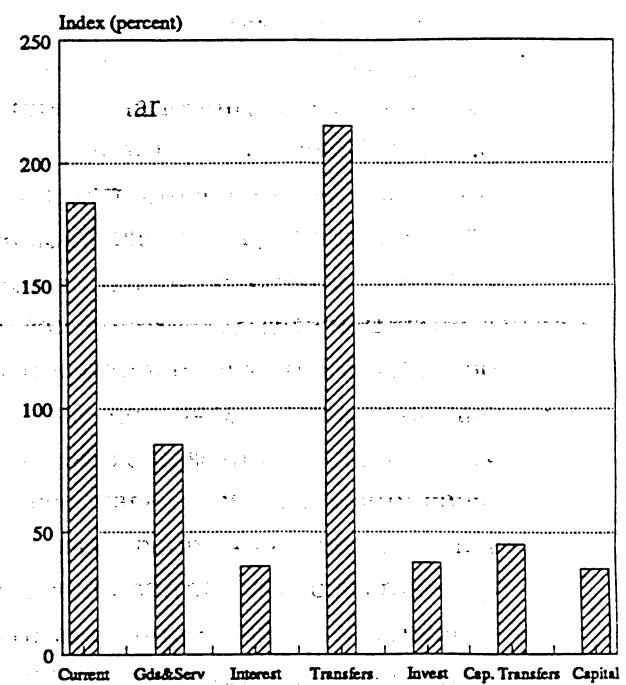
### Hungary: Functional Expenditure International Expenditure Comparison



See Table 1

Fig. 5

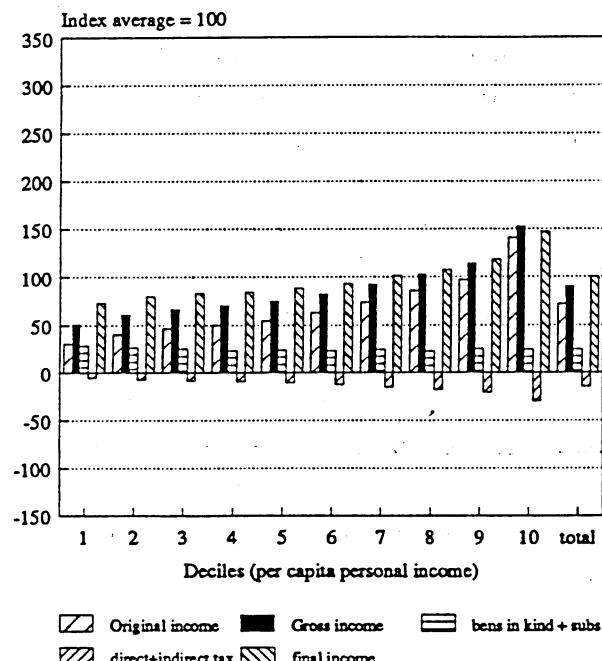
### Hungary: Expenditure 1981-86 International Expenditure Comparison



See Table 2

Fig. 6

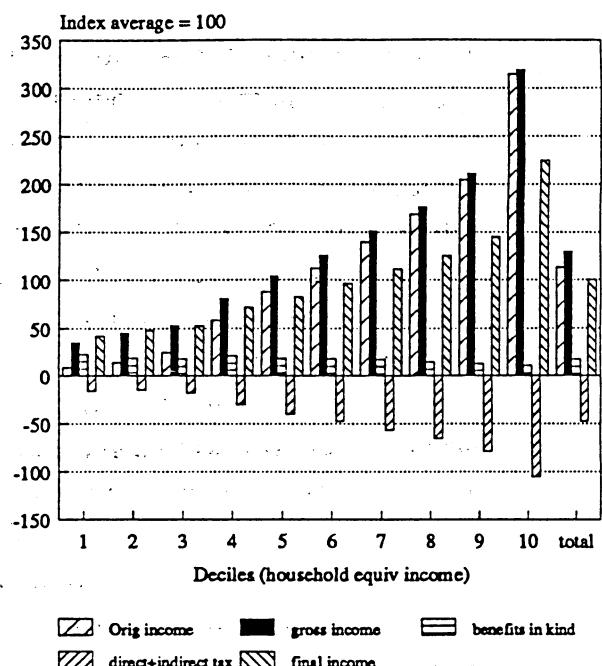
### Per household income, taxes and benefits Hungary, 1989



Kupa and Fajth (1990)

Fig. 7

### Per household income, taxes and benefits UK, 1989



Economic Trends 1992

Fig. 8

transfers) and final incomes (after tax and transfers). Of course, not all aspects of incomes are properly measured, and the largest omission is the imputed income from housing. This is particularly important in Hungary, where differences in the quality of housing are very large, especially in Budapest, but are measured in the figures. Figs. 7 and 8 contrast household incomes in Hungary and the UK for 1989 by decile, scaled so that in each country the average final income is 100, and the vertical scales are identical, allowing an immediate comparison.<sup>3</sup> Note that the highest decile in Hungary had an original income less than five times that of the lowest decile, and a final income only twice that of the lowest decile. By comparison, the UK in 1989 had comparable ratios before-tax and transfer of 37:1 and after-tax and transfers of 5.4:1. Figs. 9 and 10 give a different view of the degree of progressivity of the tax and transfer income. Taxes include both direct and indirect, while benefits include all cash transfers, social incomes in kind, and consumer subsidies, as described in the Appendix. Again the scales are directly comparable. It is clear that the UK system of taxes and transfers works harder to redistribute income, but the initial inequality is so large that it fails to achieve as much equality in final income as the original income distribution in Hungary.

## 2. The equilibrium structure of taxation and expenditure

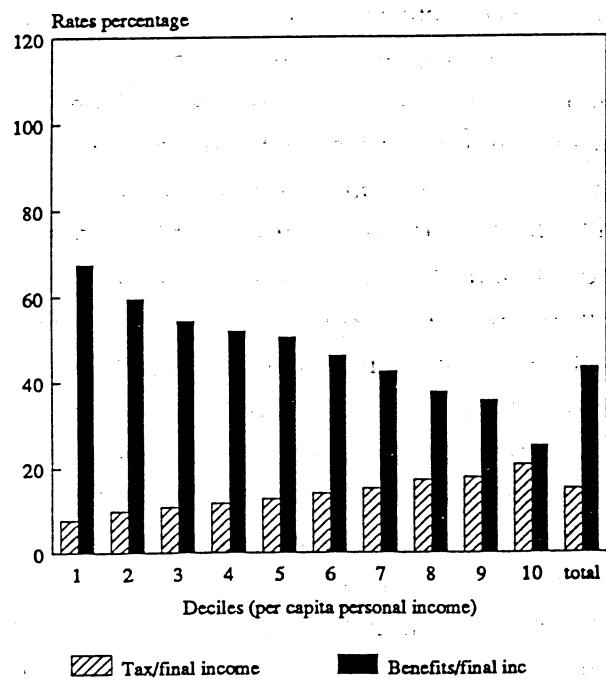
If levels and patterns of taxation and expenditure differ in market and socialist economies, as does the degree of income equality, then it becomes important to ask whether and to what extent these features are inherent in the system of economic organisation and will therefore change during the transition, or whether they are reflections of underlying social objectives that might survive the transition. If we could answer this question, we would be better placed to understand the pressures on the government budget during the transition, and perhaps better able to predict the likely future equilibrium of the economy. At the heart of the question lies the role of the state in the organisation of economic activity, and behind that, the factors influencing the power and agenda of the state.

It has taken economists (if not political scientists) a considerable while to appreciate the inter-relationships between the state and the economy. In the 1960s Development Economics viewed the central problem of initiating development as one of raising the rate of saving and investment. This might happen naturally given a favourable economic and social structure if agricultural rents could be transferred to and invested in the modern industrial sector, but it was argued that the process could be greatly accelerated if the state took an active role in raising tax revenue to finance industrial investment, that is, by forced saving. The rapid growth and industrialisation of the

---

<sup>3</sup> These figures update similar figures in Newbery (1991, 1992b) by including original income for Hungary, and 1989 data for the UK. See Appendix for sources and explanations.

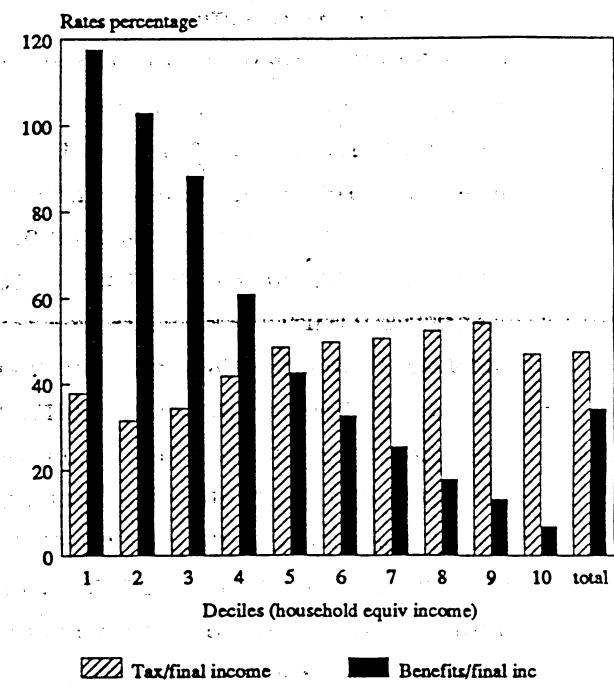
### Tax and benefit rates per household Hungary 1989



Kups and Fajth (1990)

Fig. 9

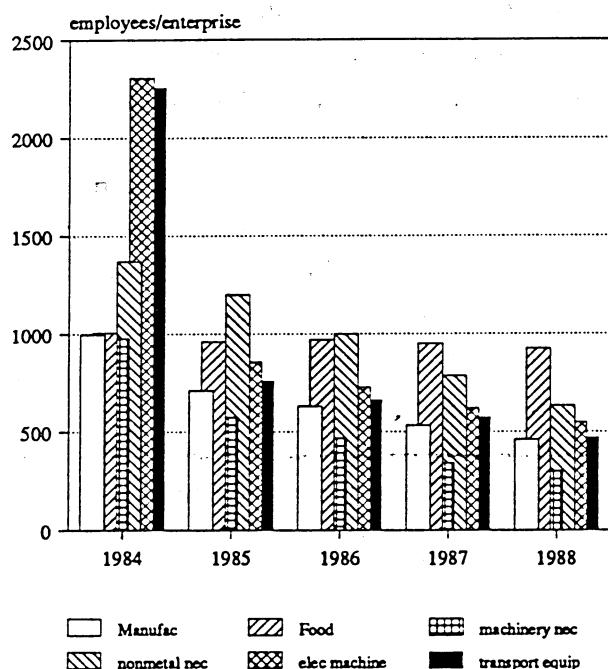
### Tax and benefit rates per household UK, 1989



Economic Trends 1992

Fig. 10

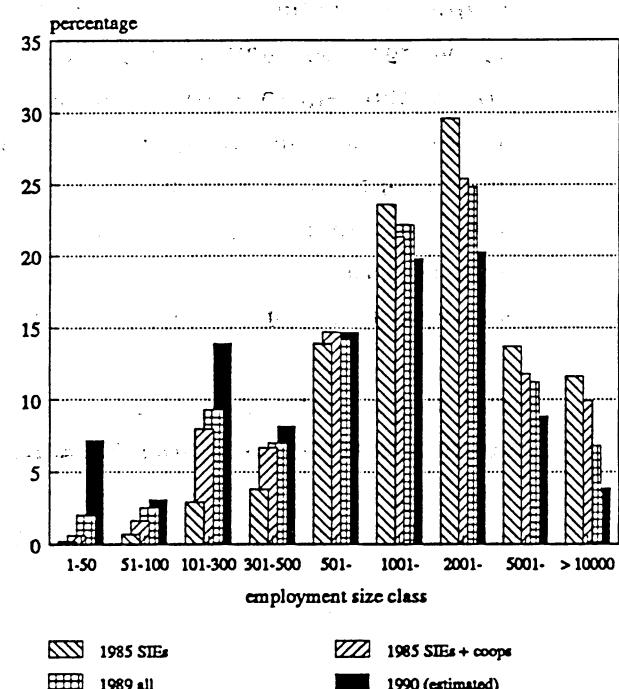
### Average employment per enterprise Hungary 1984-88



UN Industrial Statistics Yearbook 1988

Fig. 11

### Employment by size class in industry Hungary 1985-90



Hungarian Statistical Yearbooks

Fig. 12

centrally planned economies was taken as a suitable model for developing countries, and was of enormous influence in such countries as India.

The theoretical counterpart was an emphasis on growth theory and its subsequent refinement into optimal growth theory, in which the control variable was the rate of saving (taken to be equal to investment), and possibly its allocation between sectors. In retrospect, both the implied theory of the state (exogenous, potent, and with an autonomous objective) and of growth (driven by investment in undifferentiated physical capital, normally with constant returns) were simplistic (though Arrow's key insight of learning-by-doing also dates from this period). When growth theory returned to the agenda in the mid-1980s, the availability of improved time series macro-data for a large set of countries allowed these simple theories to be tested and found wanting. The unexplained residual after accounting for labour and capital was large, and varied widely across countries. It could be (at least in part) accounted for by extending the theory to include learning, either embodied in and subsequently produced by people as knowledge, or generated by physical investment (especially in machinery) (the learning-by-doing of Arrow, 1962) as a form of dynamic economies of scale, or in the form of new goods produced by capital and R&D. Public investment in infrastructure was argued to be an important explanatory variable (Aschauer, 1989), perhaps more as a constraint on growth if in inadequate supply.<sup>4</sup>

This shift in emphasis in growth theory suggests a rather different role for the state, for most of these 'new' factors (learning, economies of scale, R&D) are likely to be associated with market failures (externalities, imperfect competition, public goods), and the emphasis should therefore shift from the quantity of state aid (the amount of publicly financed investment) to its quality (support for education, provision of infrastructure, competition policy, support for research, tax treatment of machinery, etc).

If growth theory has matured, so have theories of the state and political economy. If the quality of state intervention is critical for success, then what is it that makes for good or effective intervention? Rodrik (1992) draws the crucial distinction between the autonomous and the dependent state. The former can credibly precommit its actions and policies, and agents, knowing this, then choose their best response, while the latter cannot, and needs must respond to the actions of other agents. But what determines whether or not a state is autonomous? Endogenous theories of the state attempt to explain the state in terms of interest groups, or of the underlying preferences of the population, both of which will be affected by the economic structure in terms of production and income distribution. A fully dynamic and endogenous theory of growth would then start from the

---

<sup>4</sup> If infrastructure is a complimentary input with directly productive capital, the issue revolves around the degree of substitutability between the two inputs. An extreme view would be that they are required in fixed proportions, so that shortages of infrastructure can constrain total output, and the returns to investment in infrastructure required to restore the required proportions would initially be very high.

initial conditions (including some specification of the political system), and make the form of government intervention depend on the distribution of economic and political power. These interventions will in turn influence growth, income distribution and economic structure, with subsequent repercussions for the future balance of power and nature of interventions.

On this view, political change and possibly even systemic transformation could occur naturally as a response to the evolution of the economy (if the original political economy carries within it the seeds of its own destruction), or in response to external changes (war, conquest, the collapse of the occupying power, or, less dramatically, changes in trading opportunities differentially affecting the returns to different groups or different factors, such as capital, education, location etc).<sup>5</sup>

If we had a satisfactory theory of endogenous political and economic change, then it might be possible not only to explain the transition in Eastern Europe, but also to make some tentative predictions for its future course. Indeed, such understanding would probably affect its future course, as more sophisticated choices could be made by those in a position to influence agendas and policies. It is clear that many decisions (eg on privatisation) are being taken not just for their short-run effects on the economy, but for their longer term effect on the balance of power and hence on likely future policy choices. It is, however, obvious that our present state of understanding is very imperfect, so that any such explanation will necessarily be very incomplete. Nevertheless, it is clearly important to attempt the exercise, to improve the quality of the policy dialogue and debate.

As illustrated above in figs. 7-8, Hungary in 1989 (just after the tax reforms of 1988, but before any significant moves to a private enterprise market economy) had a remarkably egalitarian income distribution. Large state-owned enterprises (SOE)<sup>6</sup> dominated industry, as shown in fig. 11, and trade with CMEA accounted for the majority of their exports (though in both cases to a somewhat lesser extent than in other ECE countries). Unemployment rates were extraordinarily low - less than 0.5 of 1 per cent, and ratios of vacancies to unemployment very high - between 5 and 10 in 1986/7 on the national level, and 66.8 in Budapest (Köllö, 1993). Despite sluggish economic performance throughout the 1980s, and a steadily worsening foreign debt, Hungary managed to prevent any deterioration in poverty, unlike Poland, and Yugoslavia (not to mention the UK and the US) (Milanovic, 1991). Indeed, real pensions in 1987 were some

---

<sup>5</sup> For a recent survey suggesting the complexity of the interactions and the difficulty of devising testable hypotheses, see Perrotti (1992).

<sup>6</sup> The ownership status of many formerly state-owned enterprises became ambiguous with the decentralising reforms of the early 1980s, which transferred considerable nominal autonomy to workers' councils. Nevertheless, they remained under close central government tutelage.

20 per cent higher than in 1978, though real wages were stagnant, and the ratio of pensions to average wages rose from 48 per cent to 57 per cent over this period, despite the rise in the proportion of pensioners in the population. What set of circumstances can create and maintain such an egalitarian income distribution?

There are two quite different explanations - the first that it is the outcome of an efficient system of implicit taxation designed to extract the maximum surplus for investment and other state activities, the second that it reflects an egalitarian concern for social welfare. Section 4 discusses the determinants of the degree of redistribution of the tax system and its impact on the income distribution in more detail, but intuitively the argument is clear. In a state-dominated economy, taxes on personal incomes and expenditures are unnecessary as workers can be directly given their 'after-tax' wage and confronted with the desired set of consumer prices. At first sight, these two explanations seem violently opposed - the first designed to exploit workers, the second to sustain their social wellbeing. This ambiguity in interpreting the intentions of the government had political advantages for the post-1956 Kadar government, and has been described as the Janus face of Hungarian socialism (Szalai, 1991).<sup>7</sup> On the one hand it allowed the appearance of continuity with the previous soviet-dominated era, while on the other it allowed the Kadar government to win social acceptance by orienting the surplus towards 'social consumption' and away from the more traditional communist goal of investment in heavy industrialisation ('goulash communism'). The consequences of this ambiguous change of emphasis are discussed below, but the mechanisms supporting a low but egalitarian wage distribution remained essentially the same.

Excess demand for goods translated into excess demand for labour and very high labour participation rates, notably for women. Low rates of unemployment were politically popular, ensured considerable worker security (reflected in high rates of labour turnover), and avoided the moral and economic problem of how to deal with poverty caused by unemployment. Market economies are ill-suited to deal with such tight labour markets (at least without tight controls on prices, trade, incomes and taxes, as in the first few decades after the war in the UK). Socialist economies managed to function with modest open inflation by ensuring that there was adequate countervailing power to workers' wage demands at the enterprise level, and above that at the central government level. The funds available to pay workers could be tightly controlled from the centre, since all flows of funds passed through the mono-bank. The bargaining power of workers was further reduced to manageable proportions by actively discouraging alternative private wage employment.

---

<sup>7</sup> Janus was the ancient Italian god, guardian of doors and gates, represented with faces on both the front and the back of his head, hence two-faced.

It is an interesting question whether this degree of control over wages (and hence consumption) required enterprises to be highly concentrated in the larger size classes, as observed in socialist countries, and shown for Hungary in fig. 12 (Newbery, 1990; Newbery and Kattuman, 1992). Certainly, a small number of large enterprises simplifies central budgetary management, and should reduce the extent to which enterprises bid against each other for scarce labour. Hungary differed from other socialist economies (except perhaps Yugoslavia) in attempting to decentralise decisions to the enterprise level, and guiding these decisions by taxes and subsidies rather than direct control. This had both costs and benefits. On the positive side, the degree of excess demand in the goods market was kept at more modest levels, as decentralisation provides incentives to respond to market signals, which implies looser control over prices and wages. The cost was that there was considerable pressure to raise consumption at the expense of investment, or by foreign borrowing, and the government had to introduce wage taxes (essentially penal taxes on excessive wage increases, rather like a tax-based incomes policy) and other forms of price and incomes control to keep inflation under control. It also seems to be the case that the manageably small number of enterprises allowed the government to continue to exercise non-market influence on their behaviour, despite the decentralisation.

Large SOEs, especially if managed by a workers' council, are likely to support egalitarian wage structures, especially if they do not have to bid against smaller more market-oriented private firms for scarce labour skills. Indeed, the political process, with its need for mass support (or acquiescence) is likely to be intrinsically more egalitarian than the blind workings of market forces, and the more bureaucratic economic organisations are, the more they will approximate to political rather than economic decision making.

Public finance in such an economy is relatively simple, as it largely consists in transferring the surplus from enterprises to the centre to finance investment. If the wage bill is centrally determined, then this surplus is the residual, and the exact choice of the tax base is moderately unimportant. In Hungary the correlation between measured before-tax enterprise profit and investment was essentially zero (Kornai and Matits, 1987). Even if taxes were levied on well-defined bases, such as wages, or output or even profits, subsidies and other transfers were arranged to ensure the desired level of investment, so the incentive effects of taxes were greatly muted. Economising on a heavily taxed input may make little difference to the effective purchasing power of the enterprise or its ability to pursue the objectives of the managers and workers. Indeed, some of the more important taxes (enterprise and income taxes) were primarily designed to penalise private enterprise, and hence protect SOEs.

Once the system of centrally directed surplus extraction has been set up, it can in principle be used to finance high rates of investment, or further redistribution and social consumption. In principle, the population might have supported either strategy. High

rates of investment earning the efficient social rate of return would yield rapid growth, and even if the wage share were depressed (relative to the competitive level), real wages should be able to grow fast. This was very much the strategy followed by President Park upon coming to power in South Korea, clearly designed to maintain mass support while rapidly building up the economic power of the country and, as a direct result, its ability to compete with the communist North (Amsden, 1989; Newbery, 1992c).

### 2.1 *Economic and social pressures for reform*

Although the socialist economies followed this high investment strategy in the early post-war decades, the productivity of investment steadily fell and with it, growth rates of output. If the government could no longer rely on the incentive of jam tomorrow, it increasingly turned to jam today, or attempted to maintain rising consumption levels with stagnant output and real wage levels, by increasing social consumption. Why? Wherein lay the seeds of destruction in the strategy of maximising employment and surplus realisation, and thereby, apparently maximising the ability of the economy to develop?

One explanation would be that the tight labour market which required oligopolistic enterprises and expropriatory surplus extraction to hold down wages destroyed the information required to ensure efficient investment. Investment is pre-eminently a future-oriented activity, whose success will not be evident for some time. In market economies the problem is to persuade investors to forego current consumption in the expectation of greater future gain, and for this to work well, the investors need secure title to the future gains, and the assurance that down-side risks are not too great or arbitrarily stacked against them. One of the main problems facing the government in a market economy lies in delimiting the activities of the state to support such expectations (Newbery, 1992c). An oligopolistic and expropriatory socialist state finds it almost impossible to reward successful investment decisions and penalise failures. If the state is to control the surplus, average rates of taxation must be high. Incentives depend on marginal rates of taxation, and these can only be kept low if the high average rates of taxation are based not on actual output or profit, but an accurate prediction of the potential output or profit. This requires high quality information. In a competitive environment of small firms, market prices provide much of the relevant information, as would comparisons between the target firm/management and that of its competitors. But the market power of the large enterprise, together with the system of regulation and price control, not to mention the whole set of taxes and incentives designed to steer the economy, so distort the prices and corrupt information flows that this system of incentives ('high-powered regulation', in the terminology of Tirole, 1991) fails. High average taxes mean high marginal taxes and poor incentives.

It is no doubt an interesting question whether there is a feasible 'third way' between capitalism and the classic soviet-type economy, that retains the egalitarianism

of socialism via state ownership of assets, but achieves the incentives and efficiency of a capitalist economy. Bardhan and Roemer (1992) propose a competitive economy in which managers are monitored by politically independent yet ultimately state-owned organs (banks, mutual funds and/or other firms) rather than private owners through a capital market. The main problem (not addressed by Bardhan and Roemer) is that of maintaining enough labour market flexibility to restrain wage push inflation without either the high levels of unemployment of European economies, or the low level of wages of marginal workers of the US model, both of which undermine egalitarian outcomes.

Even if such a third way were feasible, it seems most improbable that the dynamics of political economy would lead a socialist economy to that destination. The Hungarian economy is arguably the one economy whose transformation was largely internally generated, rather than a response to a dramatic external collapse of Soviet power, and hence is the best test case for the study of endogenous evolution. Hungary has experienced a whole sequence of 'failed reforms' intended to improve efficiency and growth by introducing incentives and decentralising decisions. None of these addressed the major problem of excessive enterprise size and the lack of competition, and so none of them were able to deal with investment incentives. However, the quest for improved incentives resulted in the gradual emergence of a small private sector, both as a means of avoiding excessive enterprise taxation (especially wage taxation, equivalent to a tax-based incomes policy),<sup>8</sup> and to introduce more incentives and rewards into the decentralised enterprises, as discussed below.

In a socialist economy which is growing rapidly, the risks of setting up a private enterprise are considerable (including the overt hostility of the dominant socialist economy), and the relative rewards are likely to be small. If the socialist economy is stagnating, the balance of advantage shifts, and as the size of the private sector grows, so does its political power to defend its interests and resist the hostility of the state sector. Where private enterprise is marginalised and property rights insecure, entrepreneurs will be unwilling to take a long-term view (of investments in capital or reputation and relationships with customers). Consumers will therefore be loath to trust them, and, if the private sector is marginal, will be able to do without them. Private enterprise in such cases will command little public support, and is likely to degenerate into mafia-like activities, reinforcing consumer hostility and mistrust.

As the private sector increases in size and importance, so it will become less marginalised, more socially acceptable, more publicly supported, and hence able to lobby for more equitable treatment vis-à-vis the state sector. An increasing number of the better educated and skilled (who are likely to be best placed to influence policies) will see the

---

<sup>8</sup> Enterprises created Enterprise Economic Units (VGMKs) that allowed workers to subcontract to the enterprise using leased equipment.

attractions of a market economy, in which their skill will be better rewarded, both relatively and absolutely. But there is a major impediment to the piecemeal transition to a mixed economy so long as the large state enterprises dominate the economy and access to resources. The managers and workers in these enterprises will resist attempts to make them more competitive (by restructuring and breaking them into smaller units) - the workers as they risk unemployment or less egalitarian wage structures, and the managers as they have considerable power in an economy which has effectively been 'captured' by producer interests (Stigler, 1971; Newbery, 1992a). Only if managers believe that they can improve their position significantly through a management buyout of part of the enterprise on favourable terms are they likely to support restructuring, and this option will require specific legislation - i.e. central government support. Existing commercial relationships between the enterprises will make entry hard for new private firms. Small private firms are likely to find it hard to obtain loans from state-owned banks, as they lie outside the central system of allocating finance. They face similar problems in renting land and buildings and hiring labour in a state-dominated economy in which markets for these factors are largely underdeveloped or missing. Similarly, they may find that they are denied access to foreign currency for imports, and are ineligible for the extensive set of enterprise subsidies, and hence are disadvantaged in competing with these subsidised enterprises. Private firms are therefore likely to remain small and undercapitalised so long as the old symbiosis between the state and the SOEs remains intact.

How might this symbiosis be undermined? The short answer is by accelerating the movement towards a market economy, and in particular, by forcing the enterprises to face a commercial environment in which their survival depends on profitable unsubsidised activity at competitive prices. The movement towards the market economy began with the decentralisation started in 1968. The reforms of 1968 were intended to create a social market economy, and although their economic success was limited, it did lead to the creation of an institutional and legislative framework more adapted to a market economy (Sárközy, 1993). More to the point, decentralisation set up tensions between the enterprises and the central planning agency. The planners attempted to guide and control enterprises by taxes and subsidies, controls over the use of the surplus, and through local party members. As already noted, this kind of indirect control necessitated high rates of taxation of profits, designed to reduce the autonomy of the enterprise, and obviously to be resisted by managers seeking that autonomy. Central wage control threatened attempts by managers to improve the incentive element of pay. In response to these tensions, and taking advantage of the Janus-faced form of Hungarian socialism, managers were able to create a reserve army of workers available to meet fluctuations in demand by exploiting the opportunities for early retirement, sick leave, maternity leave, and the other state-funded social security facilities. These workers could be reabsorbed (part-time for pensioners) when required, while the flexibility provided to labour supply allowed

enterprises to offer access to private employment, and encouraged a dual labour market (Szalai, 1993; Köllö, 1993). Workers and their families were increasingly dependent on both the formal (first) economy of state employment, and the informal, or private second economy. This response to the divergent objectives of centre and enterprise created considerable budgetary costs (for pensions of those retiring early, and for the early official retirement age of 60 for men, 55 for women, as well as for sick pay, maternity leave, etc). Together with delays in completion of past investments, and possibly those resulting from diversions from the first economy, the resulting budget deficit translated into a growing international debt, and subsequent recourse to the IMF and World Bank. They provided external support for the sequence of reforms needed to continue progress towards the market economy. The process of legislative reform continued in response to the evident need to support the kinds of structural adjustment proposed by the international organisations. For example, the growing importance of foreign direct investment was recognised in the *Act on Companies* (Act VI, 1988) and the *Foreign Investment Act* (XXIV, 1988) (Sárközy, 1993).

The tax reforms of 1988-89 were an essential part of this process, for their objective was to disrupt the bilateral bargaining relationship between enterprises and the government. Hungary had already moved a long way from the classic soviet-type system of enterprise regulation in which the surplus could be transferred to the centre and investment funds made available to the enterprise. Profits and wages were taxed, but the neutrality and transparency of the whole system was undermined by a large number of enterprise-specific turnover taxes (whose number had been gradually reduced), and by discretionary subsidies and access to loans. The objective was to replace this baroque system by a profits tax, a personal income tax (PIT) and social security contributions (SSC) largely paid by the enterprise, but with a flat rate payable by workers. These taxes would be withheld and collected by the enterprise. Turnover taxes were replaced by value added taxes (VAT).<sup>9</sup>

One of the predictable (and predicted) consequences of this tax reform was that tax revenue would decrease, and require reductions in subsidies, both to consumers, and, more important, to enterprises. Another major consequence was that the tax system became more explicit and transparent to individuals, with two obvious effects. The first was to increase political pressure to reduce taxes (which were now seen to be rather high) and hence to reduce public expenditure, and the second was to increase the attraction of working in the private sector where opportunities for tax evasion are greater. If the expenditure side of the budget is put under pressure at the same time that the tax system is made uniform across enterprises, then there is likely to be increased pressure to deal with loss-making enterprises, both because they are more readily identified, and because

---

<sup>9</sup> Details are given in Koltay (1993), and Newbery (1990b), (1991)

the excess profits previously transferred to the state from profitable firms are no longer available to subsidise them. Reducing subsidies to SOEs, and treating private and state enterprises equally (if anything collecting taxes more effectively from SOEs) further supports the emergence of a private sector by reducing unfair competition.

The other source of erosion of the old symbiosis between the state and SOEs came from the sequence of enterprise reforms, starting with the company management reform (22/1984 Law Decree) which allowed roughly 80 per cent of SOEs to become self-governing enterprises, and which transferred ownership rights to enterprise councils (Sárközy, 1993). The subsequent 1988 Company-Act allowed these enterprises to seek various forms of privatisation (Hare, 1990; Gatsios, 1992; Mihályi, 1993). Both figs. 11 and 12 show the gradual change in the average size of enterprises, and the more recent changes in the size distribution, where the increase in the proportion of employment in small and medium sized enterprises is very marked in 1990. Enterprise decentralisation meant looser central control over enterprises, and created pressures for decentralising investment finance. The institutional framework for the operation of commercial banks (as branches of the National Bank of Hungary, NBH) was set up in the 1980s, and these commercial banks became independent in 1987 (Várhegyi, 1993). They inherited large loans made by the NBH, while a large fraction of the shares they issued to improve their capital base were in turn purchased by SOEs, leading to a pattern of cross-holding. Given the emergence of such an ambiguous set of property relations, pressures for the privatisation of enterprises and the commercial banks commanded increasing support.

It is interesting to speculate whether the gradual erosion of the socialist economy by the growth of market institutions and reforms, and the emergence of a private sector, in turn supported by the need to service hard currency debt through increased reorientation of external trade, were sufficient to ensure ultimate systemic transformation, or whether the collapse of communism was essential to enable the change to an elected government in Hungary. Certainly Hungary (and Poland) provide some evidence of endogenous transformation, while in the GDR and Czechoslovakia, political change preceded and precipitated economic reform. What is clear is that even before political change, the balance of power had been shifting from the coalition of the state and enterprises with its egalitarian agenda and worker/consumer support, towards the new entrepreneurial class (managers, the private sector, and the more educated). It is also clear that much of the pressure for privatisation and budget reform is motivated more by the likely distributional consequences than the potential efficiency gains, though it is of course an important part of the political rhetoric that the potential efficiency gains are stressed. The government has argued that privatisation means transferring property rights to private owners, as private ownership is essential for a free society, though this is to be done by sale rather than a straight transfer to the population, as in the more egalitarian voucher schemes proposed in Poland and Czechoslovakia (Mihályi, 1993).

The next section looks at the evolution of tax revenue and expenditure in Hungary to see what options for future reform are likely to be feasible given the changing pattern of power, and what options, though desirable, are unlikely to command sufficient support.

### 3. The evolution of the Hungarian Budget

Fig. 13 shows the evolution of general government revenue over the decade up to 1991. Note that the figures from 1990 are from a different source and possibly a slightly different basis. Figures for 1990 from both sources are provided and suggest that the main difference in treatment is in the allocation between social security payments and domestic indirect taxes. '91E' is the estimate for 1991, and '91P' and '92P' are the planned figures. The deficit is added to total revenue, so that the height of the column gives total expenditure (also shown in the comparable fig. 14, which details the expenditure side of the budget from the same pair of sources). Where there is a surplus, the amount should be subtracted to give expenditure, and is shown as a negative number. Fig. 13 shows the effect of the 1988 tax reform in introducing PIT for all workers (not just those in the private sector). It also shows the rapid decrease in profits tax revenue, as would be expected with the shift to a Western type of tax system. The other noteworthy feature is the rapid increase in the share of social security contributions (SSC). The real level of SSC doubled between 1983 and 1989 with the major increase between 1983 and 1985. It is more surprising that the combined share of PIT and CIT has fallen over the decade, as the shift to PIT did not match the fall in CIT, and the share of profits also fell.

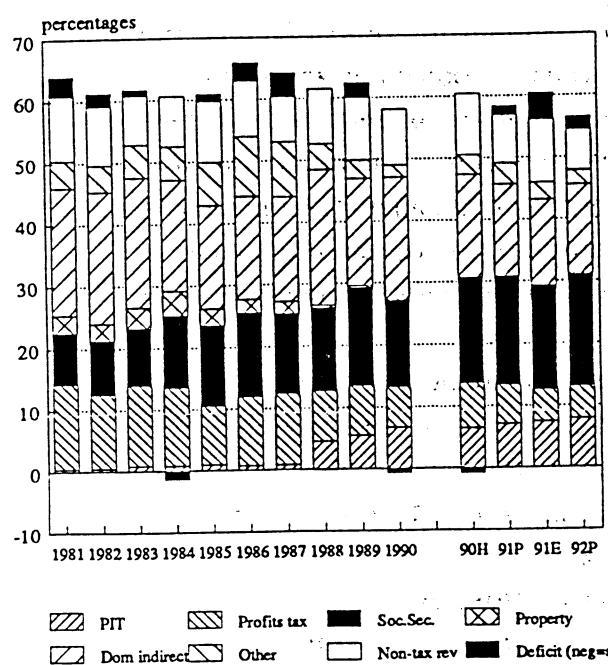
The decline in the share of profits tax can be explained by the decline in both the share of profits in GDP and of the rate of direct tax on profits. The share of 'gross enterprise profits' in GDP fell from about 35 per cent up to 1987, to 25 per cent in 1989, to 19 per cent in 1991 and an estimated 17 per cent in 1992 (Hungarian Ministry of Finance, 1992). The ratio of direct taxes to gross profits (apparently) fluctuated between 50 and 60 per cent up to 1989, and then fell to 34 per cent in 1991. The 'state dividend' increased sharply from 8 per cent of after-tax profits to 33 per cent between 1989 and 1990 for state enterprises, so the overall tax plus state dividend paid on state enterprise profits rose from 52 to 61 per cent. Offsetting this, the income of state enterprises is falling and that of limited and limited liability companies (which pay no state dividends) is increasing.

These trends, which will doubtless continue, underline the importance of the enterprise tax reform and, perhaps even more, the impact of privatisation on the budget. While enterprises remain in state ownership,<sup>10</sup> there are powerful arguments for high rates of transfer. Before the tax reforms, this was achieved by a capital tax (reflecting

---

<sup>10</sup> In some cases, this may require the state reassuming formal ownership after the period of ambiguous ownership by the enterprise councils.

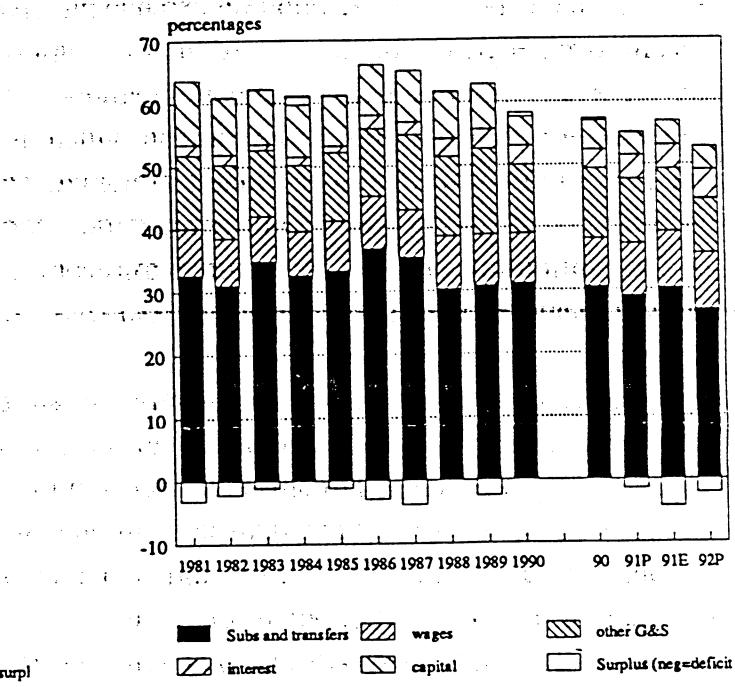
Hungary: General Government Revenue  
percentages of GDP



World Bank (1982, 5.1) IPRHung

Fig. 13

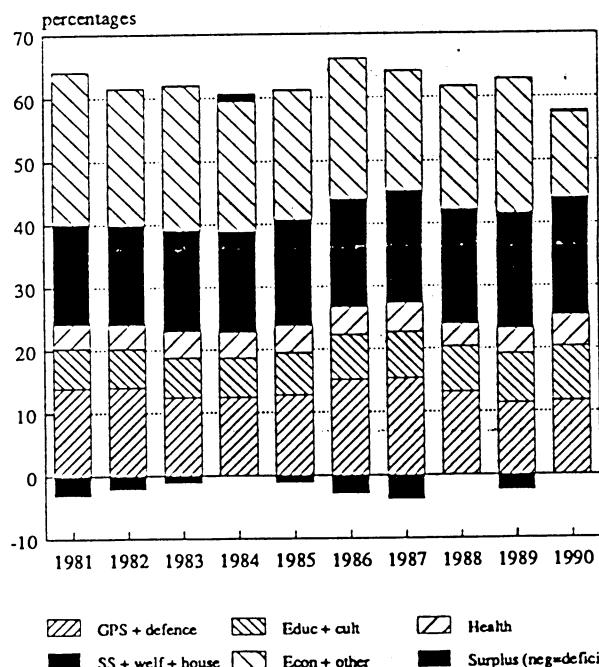
Hungary: General Government Expenditure  
share of GDP



World Bank (1992, 5.1); IMF GFS, IPRHung

Fig. 14

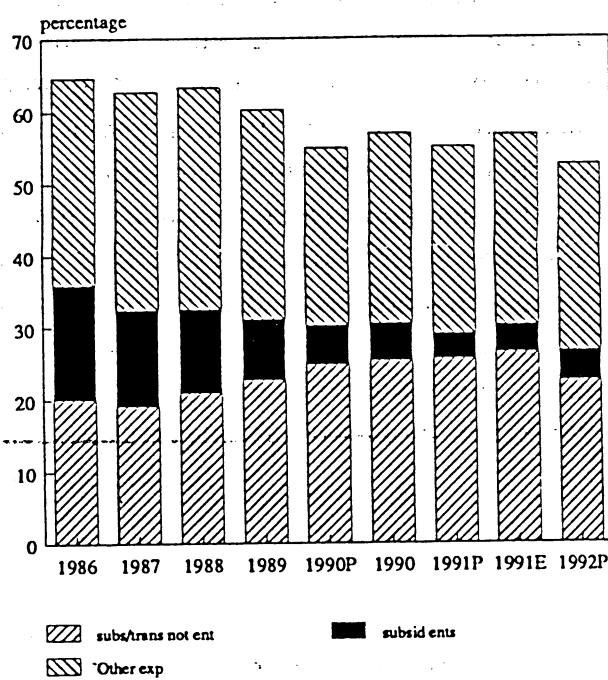
Hungary: General Government Expenditure  
percentage of GDP



GFS 1992 VB

Fig. 15

Hungary: Government Expenditure  
Percent of GDP



IMFHung Table 15 P = Plan, E = Est

Fig. 16

state ownership of the assets), as well as the whole set of taxes on incomes, wages, and output.<sup>11</sup> After the tax reform, consistency requires that SOEs pay the standard CIT, and the counterpart to the dividends paid to the owner are the required state dividends. If SOEs were privatised by sale at fair market value (the present value of future private dividends), then the proceeds could be used to retire public debt and reduce interest payments of about the same amount as the previous state dividends, leaving the budget unaffected. In practice, it seems most unlikely that the government will succeed in selling enterprises for as much as this implies, and consequently the budget will suffer, quite apart from the greater difficulty (and likely delays) in persuading private companies to pay taxes. Offsetting this to some extent, subsidies to enterprises have fallen, as fig. 16 indicates, though not enough to offset the fall in profits taxes. In real terms these fell by two-thirds between 1986 and 1991.

The impact of tax reform on personal incomes appears quite dramatic, with real PIT payments rising from 30 billion HUF(1981) in 1987 to 70 billion HUF(1981) in 1988, but it should be remembered that when the PIT was introduced, wages were grossed up by the amount of PIT, so that after-tax wages remained unaffected (in the short run). The real test of the personal income tax reform is what happened to the various components of income. Although the 'gross wage bill from legal entities' increased between 1987 and 1988, as required by the grossing up procedure, the increase was only 23 billion HUF(1981), about half the increase in the PIT. From 1988 onwards gross incomes fell in both the state and private sectors (though some of this may reflect tax evasion rather than a fall in income). Between 1987 and 1989 social benefits increased by 30 billion HUF(1981), so that real personal disposable incomes actually increased between 1987 and 1989. The net increase in government revenue (PIT less extra benefits paid out) between 1987 and 1989 was therefore only 12 billion HUF(1981), considerably short of the fall in enterprise taxes (and less than the enterprise tax rate of 40 percent on the fall in profits of 40 billion caused by grossing up wages). It is also clear that the government has benefited from inflationary 'bracket creep' where higher nominal (but not real) wages move a larger fraction of tax payers income into higher tax brackets. Indeed, inflation has been a major part of the equilibrating mechanism in reconciling revenue and expenditure. This process continued in 1993, as tax brackets were left unchanged in nominal terms on January 1, 1993.

Indirect tax revenues have also fallen since 1987-8, particularly after the alignment of CMEA prices with world market prices in 1991. Before then, the government placed taxes on CMEA imports (notably for energy) to bring the domestic price up to the world market price. The resulting loss of revenue is estimated to be about 2 per cent of GDP.

---

<sup>11</sup> In addition, depreciation was understated, so taxable profits exceeded true profits, increasing the tax transfer.

The VAT reform of 1988 also denied refunds for a declining fraction of investment purchases, and over time tax revenue from this transitional source has also fallen. The impression gained from studying the sequence of budget plans and out-turns during this period is one of desperately attempting to find new sources of revenue to offset declines caused by tax reforms and the transformation more generally, with inflation as the major saviour (except for its effect on mortgage subsidies).

Part of the fall in government revenue is due to the fall in real GDP (of 4.7 per cent between 1987 and 1990, an estimated further 10 per cent in 1991 and possibly 5 per cent in 1992); and part of this is doubtless due to the collapse of CMEA trade, and rising world real interest rates, though the transformation itself must have played a part. Enterprises are being confronted with harder budget constraints and increased competitive pressures as trade and prices are liberalised, while the forint has appreciated in real terms. (Székely and Newbery, 1993, Introduction). If trading conditions improve, then profits and wages should recover and tax revenues should then rise. However, there are good reasons for thinking that the equilibrium share of tax revenue to GDP will fall, even if the economy recovers to the level of capacity utilisation and employment experienced in market economies in normal times, as the next section argues.

Given the fall in revenue, it was obviously necessary to cut expenditure, and indeed some of the reductions in subsidies were explicitly part of the tax reform. Consumer subsidies (excluding housing loan subsidies) fell to a quarter in real terms between 1987 and 1991, and were forecast to fall to less than 10 per cent of their 1987 level in 1992. Subsidies to producers, as noted, already fell. Public investment was cut to about one quarter of its 1986 level, (from 12 billion HUF(1981) to 3.3 billion in 1991), and allocations to extrabudgetary funds were reduced from 23 billion HUF(1981) in 1987 to almost zero in 1991 (but are forecast to rise to 15 billion HUF(1981) in 1992; perhaps as a result of the expected growing claims on the unemployment funds - the Solidarity Fund and the Employment Fund). These extrabudgetary funds have in the past provided a method by which transfers to activities thought deserving by the planners could be made off the budget sheet of the government, and therefore not subject to the normal criteria for allocation (and also less subject to scrutiny).<sup>12</sup>

On the other side, however, several categories of consumer support other than price subsidies have grown considerably. Housing loan subsidies rose from 6 billion HUF(1981) in 1987 to an average of over 30 billion HUF(1981) between 1988-89. The source of the problem, discussed in more detail below, is that mortgages had been granted at nominal but fixed interest rates of 3 per cent or less, for 30 year periods, during a period when the rate of inflation was supposed to be zero (although CPI inflation

---

<sup>12</sup> One of the obvious perils of the kind of international surveillance required for international borrowing and credit worthiness is that it provides incentives for governments to conceal such activities, making the analysis of budgetary policy even more difficult than normal.

averaged 2.7 per cent per year between 1950 and 1970, 4.7 per cent per year between 1970 and 1980, and 6.8 per cent per year between 1980 and 1987). As inflation accelerated after 1987 (to 35 per cent in 1991), so the real cost of borrowing by mortgage holders became massively negative. The measured interest rate subsidy is the difference between the rate charged on loans to the Housing Fund (closer to the rate of inflation) and the mortgage rate.

Social security pensions have remained roughly constant in real terms until 1991-2, when they were cut back to about their 1986 real level. Other social security benefits have more than doubled from 30 billion HUF(1981) in 1987 to 75 billion HUF(1981) in 1991. As a result, social benefits have risen from 34 per cent of personal disposable income in 1986-7 to 41 per cent in 1991 (though benefits less income taxes have actually fallen from 28 per cent to 27 per cent over this period).

Fig. 16 gives more detail of the structure of the expenditure side of the budget. General Public Services (GPS) and defence has fallen slightly over the decade (as a share of GDP), education has risen to offset this slight fall, and health is unchanged. Table 1 and fig. 5 suggested that GPS and defence were high by international standards (but may have been overestimated), and that health and education were low, so the changes are in the direction expected (but by far less than the halving and doubling required for convergence). As noted, social security and housing subsidies have increased. Expenditures on Economic Services (energy, industry, mining, agriculture, transport and communications) and 'other' were fairly stable until 1989 but fell in 1990. After a small surplus in 1990, the budget moved into large deficit in 1991. The central government deficit was 114 bn HUF, or 5 per cent of GDP, and is estimated to have grown even further to around 200 bn HUF or 7.5 per cent in 1992, mainly as a result of lower than projected budget revenues (Hungarian Ministry of Finance, 1992). The General Government deficit is harder to estimate, and different sources give different figures. Probably the most reliable is the social accounting consolidation produced by the Ministry of Finance, showing a deficit of 126 bn HUF (5.5 per cent of GDP). This includes 80 bn write-off of mortgages. This is consistent with the expectation that neither the Social Security Fund nor Local Government are likely to have generated more than a very small surplus, if any. *Magyar Statisztikai Evkönyv 1991 (Statistical Yearbook)* gives the deficit as 53 bn HUF, though the category of 'International and other expenditures' has jumped from less than 100 bn before 1990 to 255 bn, while 'International and other revenues, credit' has also sharply increased to 158 bn. These categories may confuse capital and current transactions, and make comparisons with standard GFS classifications difficult.

The general view expressed by most observers is that tax revenues will (and on efficiency grounds should) continue to fall as a share of GDP, and that therefore expenditure will have to be cut. Kornai (1992), for example, in his perceptive analysis of the fiscal traps facing the transforming economy of Hungary, argues that the budget

will be put under increased pressure for several reasons: revenues will fall as the growth of the private sector leads to greater tax evasion and avoidance, while pressures to raise taxes on the private sector risks killing the goose that lays the golden egg. At the same time unemployment payments and the need to bail out loss-making firms will increase expenditures. There are clearly good reasons why some components of public expenditure should be increased, which implies that other categories must be cut even more severely. Such views can be assessed on two different grounds - normative and positive. The normative view argues that reducing tax rates and revenue and adjusting expenditure is desirable, given some set of ethical criteria. The positive view predicts that political and economic forces will lead to a fall in revenue and a consequential reduction in expenditure. How persuasive is the normative argument, and how far does it imply that the likely future evolution of the budget is desirable?

#### 4. Normative Public Economics and Budget Reform

The most coherent normative theory of public economics, as set out for example in Atkinson and Stiglitz (1980), is utilitarian, in that it concerns itself with the consequences of social choices for individuals. This ethical framework has considerable appeal, the more so if tempered by concepts of rights. The theory is most directly applicable to the revenue raising side of the budget, as a theory of optimal taxation. The theory addresses the following problem: how should taxes be set to raise revenue for redistribution and other public expenditures at least social cost. The expenditure side of the budget is complementary, in that the larger part of redistribution typically occurs on the expenditure rather than tax side. In a simple world with no market failures, government activity would be purely redistributive (and to that extent directly addressed by the theory of optimal taxation). In practice, market failures are pervasive and provide an important rationale for government intervention, both on the tax side (corrective taxes such as those on road users), but again more importantly on the expenditure side.

The question to be addressed is how far one can reconcile the tax and redistributive part of the present Hungarian budget with the prescriptions of normative public economics, and how this part of the budget should change with transformation. The more complicated question of how market failures should qualify these answers will be deferred until the next section.

Optimal tax theory, as set out in Atkinson and Stiglitz (1980) and summarised in Mirrlees (1979) or Stern (1987), takes a Bergson-Samuelson social welfare function as embodying utilitarian normative precepts, and a rather simple description of the economy (competitive, with no market failures) to obtain quite striking results for the choice of commodity taxation. Given some further defensible assumptions about consumer preferences it is possible to draw rather sharper conclusions for the design of a set of

taxes.<sup>13</sup> Under these assumptions, the optimal tax involves a proportional income tax (or, equivalently, uniform commodity taxes) and an optimal lump-sum demo-grant (i.e. a grant that depends on demographic circumstances, such as family size). It is also plausible that the income tax system should be progressive.

Ideally, taxes should fall on final consumption, not on intermediate goods, so that distortions are confined to consumption and not needlessly visited upon production. A VAT achieves this, though arguably at considerable additional complication, which may not be justified if tax administration is weak.<sup>14</sup> The main implication of this principle is that trade taxes are hard to justify (except on tax-administration grounds, or possibly as part of the transition process).

The main argument for taxing corporate income (as distinct from personal income) rests on the possibility of taxing foreign incomes (Gersovitz, 1987) or rents. Natural resources like oil are typically subject to specific taxes designed to capture as much of the rent as possible in a non-distortionary way. Corporate income taxes may provide a way of taxing some personal incomes and so the PIT and CIT need to be integrated and considered together. The main practical reason for keeping CIT is to avoid giving windfall gains to owners. A related practical reason in the Hungarian context is that when privatising enterprises subject to CIT, foreigners can take advantage of foreign tax credits, while domestic entrepreneurs need pay less, as the CIT is rather like non-voting state equity in the enterprise, reducing the difficulty of raising the required finance.

These general principles are useful for defining the broad structure of the tax system, but are not sufficient. The main area in which they are incomplete has to do with the tax treatment of intertemporal transactions, such as lending and borrowing. They also need to be extended to deal with such issues as the taxation of tobacco and alcohol (which interact with the provision of medical care) and the taxation of road vehicles and fuel (which can be thought of as user charges rather than taxes).

The Hungarian system of personal taxes and transfers after the tax reforms of 1988, as illustrated by figs. 7 and 9, looks more like this prescription than the UK system with which it is compared - benefits are more nearly constant across the income distribution and appear to be closely related to demographic characteristics (Newbery,

---

<sup>13</sup> If consumers are essentially identical (except for observable and unalterable characteristics, such as age) and preferences are separable, then commodity taxes should be uniform (provided all goods can be taxed). See Atkinson and Stiglitz (1980, chapter 14), and, for extensions, Deaton and Stern (1986). Part of the case for the defence is that detecting departures from separability is empirically difficult (Deaton, 1987).

<sup>14</sup> Koltay (1993) argues persuasively that Hungary would have been better advised to adapt its turnover tax towards a purchase tax, and leave the move to a VAT until a later date, once the tax authorities had acquired sufficient experience. The other argument for a VAT is that it provides information to enforce tax collection, particularly from corporate taxation (Gil Díaz, 1987), though this presupposes the willingness and ability of the authorities to match up tax returns.

1992b), while the tax system is mildly progressive. The system of corporate income tax is evolving towards the western model, and can be defended as being consistent with the international taxation of mobile corporate capital, as well as appropriate for domestic privatisation, as noted above. The main detailed objections that one could level at the tax system is that it fails to tax imputed housing income (as do most western tax systems), that its tax treatment of interest is unsatisfactory (again, as it is in most countries), and that there are unsatisfactory exemptions from income and commodity tax that narrow the base and distort the structure. Some of these are being rectified in the continuing process of reforming the budget - thus VAT at 6 per cent has now been extended to basic foodstuffs.

It could be reasonably argued that the visible and explicit tax system revealed in fig. 5 is only a part of the effective system of taxation, as wages in SOEs bear little relationship to the efficient or competitive wage level (the marginal product of labour). The difference between the gross wage and the marginal product can be thought of as a hidden or shadow tax. Atkinson and Mickelwright (1992) find that the ratio of the top decile of full-time wage earners' incomes to the bottom decile fluctuates around 2.75 in Hungary (rising from a low of 2.5 in 1982), while in the 1980s the comparable figures for the UK rise from about the Hungarian level in 1979 to 3.3 in 1990. If the competitive ratio in Hungary is taken as 3.0, then an apparent tax rate of 50 per cent might translate into an effective total tax rate of 56 per cent.<sup>15</sup>

If the structure of taxation is a defensible approximation to the prescriptions of modern public economics, what of the level, measured by the size of the transfer and the (marginal) tax rates? If we consider that the enterprise sector is largely state-owned, then profits taxes and state dividends are alike in being available to finance investment. The enterprise sector may then either make a contribution to the general budget (equal to profits less investment) or, if profits fall short of investment, may constitute a claim on expenditures. Either way, we can concentrate attention on the taxation of personal income. We can approximate the tax system by a proportional income tax (converting commodity taxes into their income tax equivalent), a uniform demo-grant, and a fixed revenue requirement to provide for exhaustive (and non-redistributive) government expenditure (eg for General Public Services (GPS) and defence, unsatisfied investment demands, and to service the foreign debt). This simplification enables us to describe the tax system by two parameters: the tax rate, and the fixed revenue requirement. What determines the optimal tax rate, noting that the higher the tax rate, the larger will be the redistributive benefits (given the fixed revenue requirement)?

---

<sup>15</sup> If the top decile in Hungary is taken as 165, and the bottom as 60, and if the top moves to 180, then after-tax income would rise from 30/60 at the bottom to 82.5/180 at the top, giving a marginal tax rate of 56.25 per cent.

Four factors influence the optimal tax rate (see Stern, 1976 for a fuller discussion). The first is the degree of inequality in skills (which is hard to observe, but is related to the degree of pre-tax earnings inequality when workers are paid their marginal product). The higher the degree of inequality, the higher the tax rate is likely to be, other things equal. The degree of skills inequality is likely to be lower in a socialist economy where education is more uniformly allocated, and is likely to increase with the transition, as many existing skills will be less appropriate for the market economy. The second is the level of required government expenditure - the higher the fraction of GDP required, the higher the tax rate. Hungary may have a higher required (non-redistributive) revenue requirement for GPS than comparable countries, but the real difference is in the size of foreign debt service, where Hungary's ratio of debt to GDP puts it among the most heavily indebted countries. Servicing the debt is a powerful argument for maintaining rather high tax rates. A decrease in rents (or surpluses) from SOEs as they are privatised or given greater autonomy has a similar effect.

The third factor is the elasticity of substitution between taxed and non-taxed activities (work and leisure in the benchmark case of a comprehensive tax system in which all goods and services can be taxed). The higher is this elasticity, the lower the tax rate, provided the tax system generates enough income to cover the fixed government expenditure requirement. Soviet-type economies have remarkably extensive control over incomes (via the SOEs) and over access to consumption and work, greatly reducing the opportunities for substituting untaxed for taxed activities. The transition puts this at risk for two reasons. First, the move to a decentralised market economy with more numerous smaller firms will inevitably lead to a loss of information, and a decreased ability to reliably estimate tax liabilities. Second, the whole system of tax collection will change, as new taxes are introduced, new forms of accounting are adopted by firms, and large numbers of new firms are set up. During the period of adjustment while staff need to be retrained, the efficiency of detecting tax evasion will surely decrease, widening the range of effectively untaxed alternatives open to taxpayers, some legal, others not. This will lead to a fall in the fraction of income that comes within the tax net. As the tax base decreases, the marginal cost of raising the tax revenue rises, and the optimal tax rate will fall.

In addition, the more open the economy and the lower are transport and transaction costs, the more distortionary are high marginal rates of tax on mobile factors. This is primarily a constraint on capital taxation, as labour mobility is still very restricted. Nevertheless, high tax rates on those with internationally accepted skills can create problems (and appear to do so in the Republic of Ireland). Other things being equal, then, optimal tax rates can be expected to fall as the economy becomes more flexible and open, and the tax system becomes less all-embracing and more evaded.

Finally, the more egalitarian the government, the higher the tax rate. We have already argued that Hungary was exceptionally egalitarian by western standards. The only comparable countries would be the Scandinavian countries, notably Sweden, which commands mass support from a fairly homogenous population, and where taxing property owners at high rates is acceptable as they are politically weak. The transition in Eastern Europe has seen less political commitment to the previous degree of equality. This may be because the equality was externally imposed by the Soviet system, and could not be actively resisted by the population, or it may be that the population believe that the costs of achieving equality now seem too great compared with the benefits of a more dynamic but necessarily more unequal market economy. It may also be that inequality in wealth is valued as providing a counterweight to the concentration of political power experienced under the previous regime. For whatever reason, if support for egalitarian policies falls with the move to democracy and the decentralisation of power and control, then so will the desired marginal tax rate.

These theoretical considerations pull in different directions. The first two arguments suggest that an increase in taxes might be justified. Marginal products of labour (and hence the correct measure of wages) may become more dispersed with a move to a more internationally exposed market economy, arguing for more redistribution. Required public expenditure on infrastructure (telecoms, transport), debt service, and support for the rapidly increasing numbers of unemployed may have to rise as the CEE countries reach the limit of prudent international borrowing and attempt to restructure their economies, again requiring tax increases. The fall in profits taxes has the same effect. The last two arguments suggest that optimal tax rates might well fall as a result of transformation, as the ability of the tax system of collect revenue efficiently falters, and public support for equality erodes.

The theoretical arguments might on balance suggest tax reductions, but even if this were accepted, in itself that conclusion is not very helpful. It is important to know whether the suggested fall is likely to be dramatic or insignificant, and what factors have a large influence on the outcome. Stern's seminal (1976) article asked similar questions in the context of the choice of an optimal linear income tax, but assumed complete tax coverage, and so the critical question of how a decline in the efficiency of tax collection affects the amount of tax to raise cannot be readily addressed. Newbery (1992) has developed a simple model of consumer behaviour which allows these four effects to be quantified. The skill distribution is modelled as log-normal, and can be measured either by the variance of the log of incomes, or by the Gini coefficient. Consumer preferences are assumed to be weakly separable in leisure and goods, and have linear Engels' curves, so that the optimal commodity tax would be a uniform VAT, equivalent to a linear income tax. Incomplete tax coverage is then modelled by setting zero tax rates on a

subset of commodities, with standard rates for the remainder (the constrained optimum if some goods cannot be taxed). This approximates reality quite well.

Finally, attitudes to inequality are captured by assuming that the social welfare function has a constant coefficient of relative inequality aversion,  $v$ , following Atkinson (1970). This amounts to assuming that the social value of a consumption level of  $c$  is  $U(c) = c^{1-v}/(1-v)$ ,  $v \neq 1$  (and  $\ln c$  for  $v = 1$ ). This has the appealing property that  $v = 0$  corresponds to a complete disregard for inequality, where society is solely concerned with total consumption and not its distribution, with higher values attaching more importance to redistributive goals. The social marginal utility of making a unit grant,  $g$ , to a consumer enjoying consumption  $c$  is then  $dU/dg = c^v dc/dg$ , and one can think of  $c^v$  as the social weight attached to consumption. Thus if  $v = 2$ , the value of an extra \$ of consumption for someone consuming twice the reference level is only one-quarter that of the reference level ( $= 2^{-2}$ ).

The parameters of the model were calibrated to correspond to Hungary's skill distribution, and for an elasticity of labour supply comparable to that in the UK and defended by Stern (1976) in his quantification. The question to be asked is how the optimal tax rate varies with changes in the four factors noted above, and the detailed answer is provided in Newbery (1992). Briefly, the first and last factors seem to roughly offset each other, while the third effect is by far the most powerful.

The effect of changes in the skill distribution (caused, for example, by the obsolescence of skills specifically attuned to those required in a Soviet-type economy) are modelled as a shift from a CEE reference case of (which has a Gini coefficient of 0.168) to the UK case, with a Gini of 0.217. The effect of this change is about the same as a change in inequality aversion  $v$  from 0.8 to 1.5 and in the same direction. Put another way, if wage inequality rose as much as this move, then it would need a considerable but plausible decrease in concern for inequality to offset the case for higher tax rates.

The effect of reducing the coverage of taxation is dramatic. Reducing the tax coverage by 20 percent roughly halves the level of redistributive expenditure, and is clearly of the first importance. Despite the reduced coverage, which might argue for higher rates of tax to compensate for the fall in revenue, the optimal tax rate on the goods still taxed decreases quite sharply. Increasing the required level of public expenditure from zero to about 4 percent of GDP raises the rate of VAT by a very modest amount (between 1 and 4 per cent) and further reduces the amount of redistributive expenditure (by about 3 per cent of GDP), so that non-redistributive public expenditure crowds out redistributive expenditure almost one for one.

If we look at the Hungarian tax system, at the moment if SSC is not treated as a tax, the average tax rate is about 33 per cent (of GDP). The marginal PIT rate for the bulk

of the population in 1992 will be 35 per cent (on a tax base of 200,000 to 500,000 HUF).<sup>16</sup> Indirect taxes are about 20 per cent of private consumption, so the effective marginal tax rate (ignoring shadow taxes) might be as high as 50-55 per cent.<sup>17</sup> If some part of SSC is (reasonably) treated as a tax, the marginal tax rate would be higher. The marginal (distortion) cost of raising taxes when the tax is a proportion  $t$  of before-tax income is  $t/(1-t)$ , so reducing  $t$  from 0.6 to 0.5 lowers the marginal cost by one third. If tax rates were lowered, then the redistributive part of the government expenditures would by implication also fall, proportionately more given the fixed element of government expenditure.

#### 4.1 *The expenditure side of the budget*

The argument so far has been kept deliberately simple by assuming that taxes were required to redistribute income and meet unavoidable costs. The time has come to look at the normative determination of the expenditure side of the budget in more detail. If public economics has a well articulated theory of optimal taxation, there is considerably less theoretical guidance on the expenditure side of the budget, in part because it contains such a mixture of categories, each with a rather different rationale. The two main justifications for public expenditure are to redistribute income and to correct market failures. The first category is naturally addressed by the techniques of optimal tax theory. The second is a more disparate collection of activities (as markets may fail for a whole variety of reasons). To further complicate matters, there may be several different solutions to a given market failure, with very different implications for the share of public expenditure. To take a trivial example, vehicle insurance in Hungary is publicly provided, and financed through fuel taxes (and, arguably, to some extent through other vehicle taxes). In most market economies, vehicle insurance is privately financed by annual fees which are specific to the type of vehicle and the driver's record. Neither is perfect, and each gives rise to various distortions. Making insurance fees depend on the accident record provides some (arguably weak) incentive to take care (reducing moral hazard) but runs the risk of adverse selection. Making insurance charges depend on fuel consumption relates contribution to accident exposure, but encourages excessive fuel efficiency and weight reduction (which may increase the severity of accidents). In some

---

<sup>16</sup> If the main earnings of households reported in Kupa and Fajth (1990, table 1.2.1d) are revalued at 1992 prices, all but the top and bottom decile fall in this range. Of course, the tax base is lower than the main earnings, and is levied per person and not per household, so a smaller fraction will have taxable earnings in this range.

<sup>17</sup> 20 per cent indirect tax on after tax income of 65 per cent of pre-tax income would only be 13 per cent of pre-tax income, making the marginal equivalent tax rate 48 per cent, but the protection offered by import duties allowing prices and profits of domestic enterprises to be raised should also be taken into account. The figure could usefully be refined.

countries (like the UK) the social costs of vehicle accidents (the extra costs of police and publicly provided medical care) are attributed to road use costs and charged through road taxes, while the private costs are met through private insurance, reflecting a blend of each extreme.

A more important example is pensions. Hungary, like all socialist economies, has an entirely state financed pension system. In the UK in 1988 only 51 per cent of pensioners' gross income came from state sources (retirement pensions and social security), rather less than 10 per cent from employment earnings, and the balance from occupational pension schemes and investment income (HMSO, 1992b, p93). The main market failure limiting the private provision of pensions is the lack of an adequate hedge against inflation, which can be resolved by the government provision of indexed securities. These have been available from the UK Government for over a decade, and allow private insurance companies to offer pensions indexed to the CPI.

It might be thought that the two rationales - redistribution and correcting market failures (to improve efficiency) might provide a suitable taxonomy for classifying public expenditure, but many market failures have a marked distributional impact, as Holzman (1989) has argued. An obvious example would be the market provision of education, where wealthy families could support children at private schools, but children in poor families might find it hard to borrow against their expected future earnings, as in the absence of slavery, they have no collateral to pledge. Financing college education with loans runs into similar (perhaps less extreme) problems, and most loan schemes are underwritten by the state (and have very high management costs and default rates). A graduate tax with 'free' higher education may be both more efficient and more equitable (and would also inflate the measured share of the public sector compared to loan finance).

Table 3 gives an alternative breakdown of general government expenditure in Hungary in 1989. It should be again noted that the share of total expenditure in GDP is overstated by this breakdown, as the Hungarian budget does not properly consolidate numerous intergovernment transfers, but this does not affect our present purpose of categorising different types of expenditure.

The first category of *traditional public goods* are widely accepted as legitimate items for public finance, as markets would fail to supply the efficient level of these goods. The second category, *social welfare*, is more problematic as expenditures here can be defended for several reasons: as efficient means of redistributing income; or as forms of publicly provided insurance where it is felt that market failures preclude market provision; or to overcome market failures in the credit market. Whether they need to be publicly supplied or whether the market failures could be adequately overcome to permit private provision could then make a considerable difference to the size of the public sector, as noted above. If we take the first sub-category of *merit goods*, the arguments for public provision are strong on efficiency and market failure grounds, and we have already

noted that Hungary spends less on these than comparable countries. The main items that need more careful scrutiny are those in the second category of *income maintenance*.

**Table 3 General Government Expenditures by Functional Category, 1989**

*per cent of market price GDP*

<b>Total Expenditure</b>	<b>63.7</b>
<b>I. Traditional Domain: Public Goods</b>	<b>11.5</b>
Defense	2.1
General Public Services/Public Order/Safety	9.4
<b>II. Social Welfare</b>	<b>33.8</b>
A. <i>Merit Goods</i>	10.6
Education (including Scholarships)	4.5
Health	5.0
Recreation and Culture	1.1
B. <i>Income Maintenance</i>	23.2
Housing Subsidies	5.1
Consumer Subsidies	3.0
Pensions	9.2
Sickness Benefit	1.3
Family Allowance	3.1
Maternity and Child Care	0.9
Employment and Solidarity Funds	0.1
Other Social Assistance (cash)	0.5
<b>III. The Mixed Economy</b>	<b>18.4</b>
Economic Affairs and Services	15.8
Fuel, Energy, Mining, Manuf., Construc.	3.2
Agriculture, Forest., Fishing, Hunting	2.5
Transport and Communication	2.6
Other Economic Affairs and Services	7.5
Other Expenditures	2.6

Source: World Bank (1992a, Table 3.3)

The final category, described as the *mixed economy*, is, as the name suggests, an even more mixed collection. Transport is a good example. In market economies road users typically pay various taxes and licences which can be thought of as *road user charges*, that is, charges or fees for the use of the road infrastructure. In the UK these charges are about equal to the total cost of the road network (interest on capital plus operating costs), as might be expected from an efficient system of charging marginal social cost in the presence of constant returns to scale (Newbery, 1989; 1990a). Public accounting being what it is, though, road user charges are more than twice as high as 'road expenditures', which exclude interest on the capital value of the road network, but

include investment in new roads (as well as maintenance and other operating costs). Offsetting this apparent surplus on road transport, rail is heavily subsidised by the central government, though the sum of the two yields a surplus on the conventional system of accounting. Again, this could be moved off-budget if it became feasible to introduce electronic road pricing which replaced all road user charges, and allowed the separation of the Road Fund from the conventional budget (just as telephones are normally separated). Electronic road pricing would enable rail privatisation as rail would then be able to compete on the same basis with road, so the entire transport sector could be transferred out of the budget.

Most of the other items in this category are (probably) subsidies of various sorts, and many of the activities should probably be privatised.<sup>18</sup> During the transition, many SOEs will undoubtably make heavy losses, and these will in large part fall ultimately on the state budget (even if they appear as losses of the state-owned banking system). To the extent that budget constraints are hardened and enterprises fail, unemployment will increase. Both expenditures (subsidies to cover losses, and unemployment benefits) can be thought of as investments in restructuring the economy. As such, they, like the existing foreign debt, will need to be serviced out of future revenues. The foreign debt was about 70 per cent of GDP in 1989 (Oblath, 1993, Table 11.A1; or 69 per cent for 1990, compared to 47 per cent for 'severely indebted countries', according to World Bank, 1992b) so that at a real interest rate of 5 per cent, the expenditure on this account alone might be 3.5 per cent of GDP.<sup>19</sup>

To summarise, expenditure categories I and IIA taken together are unlikely to fall, and there are strong claims on category III for restructuring and debt servicing, so that if, as seems desirable, expenditures should fall, category IIB, *income maintenance*, will have to bear the brunt. This is consistent with the view that the redistributive component of the budget needs to be reduced if taxes are reduced.

## 5. Reducing public expenditure

### 5.1 *Housing subsidies*

The leading candidate for reductions in transfers are those to housing subsidies, as these are both regressive and large. According to Kupa and Fajth (1990, Ch II, Table 1.2.2.i) mortgage payment subsidies were the largest single item and accounted for 17 per cent of total household subsidies (social income in kind and subsidies). They were allocated

---

<sup>18</sup> and a significant fraction of the 'other' categories are extrabudgetary accounts, which are notoriously opaque.

<sup>19</sup> If the foreign debt is not to grow in real terms, then a constant payment for ever of initially 3.5 per cent of GDP (but falling as GDP grows) would service this debt at 5% real. For the debt to be reduced in real terms the share would be higher, and if the real debt is allowed to grow at a slower rate than GDP then debt/GDP would fall and the interest share could be lower.

across income deciles almost directly in proportion to personal net income per household (Newbery, 1992b, Table 9).<sup>20</sup> If one takes all housing subsidies (rent, heating, water, sewage, mortgage and investment subsidies), they amount to 74 per cent of total consumer subsidies, and one third of all transfers, but they are somewhat less regressively distributed, with 1.5 times as much going to the top fifth as to the bottom fifth.

How can this element of expenditure be reduced and better targeted? The obvious solution to the mortgage loan subsidy is to index the outstanding loan to the CPI, charge a real interest rate, and either also link repayments to the CPI or, perhaps better, make repayments move in line with the average wage. The real rate of interest should be at least equal to the marginal cost of foreign borrowing, and might usefully be taken as 5 per cent real (real indexed long bonds in the UK currently yield about 4 per cent). To give an example, suppose the mortgage at the start of 1991 is 1 million HUF, and the inflation rate is 36 per cent over the year. The initial interest would be 50,000 HUF, amortisation might be 30,000 HUF, so the total repayment would be 8 per cent or 80,000 HUF for the first year. At the end of the year the mortgage would have been revalued to 1.36 million HUF less the (revalued) repayment of 35,000 HUF, or an outstanding debt of 1.325 million HUF, on which next year's interest plus repayment would be 106,000 HUF. Compare this with paying a floating rate mortgage at a nominal rate of 36 per cent (inflation) plus 8 per cent (real interest plus amortisation) totalling 44 per cent, or 440,000 HUF in the first year. The pressure to provide subsidies in large part derives from the high rates of inflation which require high nominal rates of interest. Of course, if borrowers could be reassured that they could borrow to refinance their debt, they could arrange the same time path of repayments with either floating nominal or real interest rates (set at the same real rate), but this reassurance is typically absent, and lenders are likely to assess credit-worthiness in terms of ability to service the nominal interest payments.

The case for introducing a set of indexed securities (of varying maturities) would seem to be very strong, not just to avoid housing subsidies, but to provide the instruments currently lacking for retirement savings, whether personally arranged or offered through private pension schemes. The government is best placed to provide this kind of inflation insurance (holding foreign indexed securities still leaves open the exchange rate risk, and in any case encourages capital flight). There is the additional argument that if the government wishes to signal its intention to defeat inflation, issuing indexed securities is a way of making this claim credible (and one should be deeply suspicious of any government refusing to offer such securities). What conceivable reasons could there be for not offering these instruments? One argument is that indexed mortgages and

---

<sup>20</sup> This table actually shows the allocation of subsidies per capita rather than per household, and since poorer households are larger, the effect is more pronounced.

securities generally would force the government to rethink interest income taxation in order to sort out the tax reliefs made available for mortgage interest borrowing. High rates of inflation would provide a strong argument for indexing the interest and capital gains tax. Arguably the simplest way of achieving this would be levy an annual tax on the market value of the security, at the desired rate times the assumed real rate of interest. If the government were willing to borrow at 4 per cent real for a one year bond, and the desired tax rate were 25 per cent, then an annual tax of 1 per cent of market value would achieve this. But it should be pointed out that the UK has not indexed interest income taxation, though it has introduced indexed bonds and indexed capital gains taxes, so complete consistency is clearly not necessary. A more radical reform would be to abolish the taxation of capital income (and with it, any tax relief on borrowing).

Another objection might be that the government believes that indexing any payment reduces its commitment to curb inflation. This is simply mistaken, as it actually has the opposite effect, and derives from the observation that if spending ministries have indexed spending plans they will have little incentive to reduce expenditure. A more telling objection is that it provides unfair competition with the private sector who might be relied upon to provide mortgages and who might find it hard to offer indexed mortgages. However, there would seem to be no good reason why a private building society (S&L) could not issue indexed mortgages and offer indexed building society deposit accounts. The main practical reasons are that depositors find indexed instruments harder to understand, and may not supply enough to meet demand, while tax and accounting laws may have to be modified to enable the private sector to operate them successfully.

Rent and heating subsidies account for 20 per cent of subsidies, and the former are almost certainly massively understated, as rents are so low. Rents appear to be less than 1 per cent of the cost of building (*Magyar Statisztikai Evkönyv 1992*, tables 18.4, 18.9) and have fallen since 1985. There is a strong case for raising rents to market levels and providing carefully targeted housing benefits, though this is clearly perceived as being difficult and potentially costly, as the subsidies may spill over to those not previously enjoying the low rents. The constraints on sensible policy changes in the housing market seem so extreme, that the present solution of allowing tenants to initiate buy-outs from the local government (the normal owner) at centrally determined and rather low prices may be the only viable solution, though one that does little to improve the budget. In 1990 54,000 state-owned flats were sold, and in 1991, 82,000 were sold, in each case at less than one-quarter their building cost (*Magyar Statisztikai Evkönyv 1992*, table 18.10) though for 26 years' rent.

It is noticeable that over the past decade by most measures the quality of Hungarian housing has improved (eg square meters per person) although other measures of consumption have not increased in real terms. Given the high and rising fraction of

privately owned housing and the declining population, it is hard to argue that additional resources should continue to be diverted to this activity. But the very success of private ownership means that there are powerful political economic pressures to retain existing subsidies to home owners and to avoid introducing taxes (including local taxes or rates) on houses.

### 5.2 *Consumer subsidies*

The logic of optimal taxation suggests that all consumption goods should be taxed at the same rate, unless there are compelling reasons to believe that taxing some goods at a higher rate improves the efficiency and equity of the overall tax system.<sup>21</sup> If the degree of income under-reporting of the rich is higher than average, then higher indirect taxes on goods which are very income elastic may make sense (new luxury cars being a good example). In this framework it is very difficult to think of reasons for negative indirect taxes or consumer subsidies. To the extent that they are to redistribute income they are better replaced by their cash value for the lower quintile, thus making them better approximate a demo-grant. They can be defended where they are to correct market failures (urban public transport, for example).

### 5.2 *Pensions and sickness benefit*

In 1986, 21.5% of the Hungarian population was over the retirement age (partly because the retirement age is 60 for men, and 55 for women). In Britain in 1988 the proportion of the population above UK retirement age was 18.2%,<sup>22</sup> and above the Hungarian retirement age was 23.4%. The Hungarian population is declining slowly, so the proportion of elderly might be expected to be somewhat higher than in the UK, but it is lower because of the considerably lower life expectancy in Hungary.

Pension payments accounted for 62% of total social incomes in cash in 1978 and 61% in 1989, despite the 25% increase in the number of pension recipients. The rapid inflation in the latter part of the 1980s eroded higher pensions, except for the older pensioners, but the government appears to have done a good job in indexing lower pensions, and one can interpret this as a conscious attempt to protect poorer pensioners from the adverse effects of recent reforms. Given the pressures on the budget and the large share already accounted for by pensions, though, the natural solution is to make a commitment to raise the pension age in line with life expectancy, (which has been declining, but which will surely at some stage begin to improve), otherwise any improve-

---

<sup>21</sup> See footnote 14 for qualifications. There are additional reasons for imposing excise taxes on certain goods like vehicle fuel to correct market failures or to act as user charges.

<sup>22</sup> The proportion of the population actually receiving retirement pensions was 17.6% of the population (*Annual Abstract, 1990* Table 3.21)

ments in living standards which show up in improved health are likely to precipitate a pension funding crisis, given the projected declining population size. The other argument for raising the pension age is that the flexibility to move between the first and second economies is no longer needed, so a low retirement age is now dysfunctional.

At a more fundamental level, Hungary will need to decide whether, and if so, how quickly, to move to a system of private and occupational pensions, designed to supplement the basic minimum state pension. One extreme solution would be to determine the minimum state pension (at or near the poverty level), and then to set the contribution rate at a level to fund annual pensions, while at the same time ensuring that the pension paid to any cohort reflected their lifetime contributions.<sup>23</sup> Existing pensioners would thus be protected (as they would not have the chance to now make additional private pension arrangements). Those entering the labour force would face higher pension contribution rates early in their life as the old system continues to require funding, but these rates would fall, releasing income to be privately saved during the period of peak saving (ages 50-65). A variant on this is that shares in privatised SOEs (and indexed bonds purchased with the sales proceeds of shares sold to the public) could be allocated to the pension fund as a way of partially funding future pension liabilities, on the argument that past workers received low wages in return for a higher surplus that was reinvested in these SOEs (Augusztinovics, 1993). This would primarily be a cosmetic change, as the loss in revenue (on the dividends of the privatised shares, or the reduced interest payments from retiring the national debt with the sales proceeds) would have to be made up in additional taxes elsewhere.

The main issue to address is whether or to what extent there should be a link between contribution and subsequent pension. The advantage of such a link, provided it is made explicit and is clearly understood by contributors, is that contributions then cease to have a tax-like quality and may have less of a disincentive. This can be overstated. For example, if contributions earn a real rate of interest  $r$ , so that a contribution of \$1 now produces a real increase in pension after  $T$  years of  $e^{rT}$ , and if the individual discounts future consumption benefits at rate  $\delta > r$ , then the present value of the future extra pension is  $e^{-(\delta-r)T}$ , and the perceived tax rate on the contribution is  $1-e^{-(\delta-r)T}$ . Suppose that  $r = 4\%$ ,  $\delta = 9\%$ , and  $T = 30$  years, then the contribution is only worth 22 per cent of its nominal value, and the tax element is 78 per cent of the SSC. Offsetting this, one might expect that the distortionary effects of taxation rise with age (as incomes and tax rates rise,

---

<sup>23</sup> For those who have worked the majority of their life in the state sector, this may have to be largely estimated and imputed.

and alternative opportunities of higher income earners increase, not to mention the increased pervasiveness of capitalism) but this tax element would decrease with age.<sup>24</sup>

If workers are to supplement a minimum state pension, they need access to indexed securities, for which a cogent case has already been made. An active housing, rental and annuity market would also allow Hungarians to use their savings in the form of investment in private housing to supplement their retirement income. The emergence of pension funds would seem a natural concomitant of privatising SOEs, since in market economies the bulk of shares are held by institutions rather than private investors, for obvious reasons of risk pooling and expertise.

The other way in which pension claims can be reduced are to remove the link with terminal wages in order to reduce incentives for manipulation, and to reduce the abuses of early retirement and disability pensions. Sickness benefits are also prone to abuse and can doubtless be reduced, again, as the tension between the first and second economies is resolved in favour of the latter.

### 5.3 *Family allowances, maternity and child care*

Family allowances would seem to fit the ideal of a demo-grant remarkably well, as they are targeted to households with higher needs, and, when paid to the mother, improve distribution within the household. The main question is whether targeting could be better improved by taxing family allowances. Jarvis and Mickelwright (1992) argue that this would not be desirable, as the unit of assessment under the present Hungarian income tax system is the individual, not the family, and hence not well suited to the desired form of targeting. Maternity leave and child care might be better targeted by making support flat rate rather than earnings-related, though this may conflict with pro-natalist policies.

## 6. The political economy of tax and budgetary reform

No doubt some public expenditures are unproductive and can be readily cut (sickness and benefits and disability benefits), while others will be dealt with as the tax reform is fine-tuned (various subsidies, exemptions etc). But other expenditures will rise (unemployment benefits, debt servicing) or should rise (on infrastructure, education, health), putting great pressure on the redistributive element of the budget system. On normative public economics grounds section 4 argued that there is a strong case for reducing both the marginal tax rate on individuals, and the amount of the lump sum transfers (both in cash and kind), even if unavoidable expenditures rose considerably. There are additional normative arguments for eliminating regressive transfers like housing subsidies, broadening the tax bases, and improving tax administration to reduce the

---

<sup>24</sup> The personal rate of discount,  $\delta$ , would probably fall with growing age and wealth, moving the effect in the same direction.

degree of evasion, though if this is unsuccessful, there is a case for further reducing taxes and transfers. Improving the targeting of benefits runs into an obvious political problem - the more narrowly focused and better targeted the benefit, the fewer the beneficiaries and the less will be the selfish political support to provide the benefit. Conversely, the broader is the benefit, the greater the support, and the harder it is to make cuts (education, health, and housing being leading examples in most countries).

One possible way of overcoming this obstacle to ethically defensible reforms might be to make the social contract explicit - tax rates will be reduced but only if broad-based benefits are reduced in line, and a social safety net provided (effectively as a social insurance contract).<sup>25</sup> But this presupposes an ethical representative of the whole population to put this contract forward, and the realities of party politics in the new democracy make this less likely. Instead, what seems to be happening, whether by accident or design, is that tax revenues are falling or being reduced first, putting pressure on the budget. Any proposed cut then has to achieve sufficient support on its own merits, not as part of a *quid pro quo* for the tax reduction. In such cases benefits targeted at the poor are likely to be very vulnerable. The end result is likely to reflect a considerably less egalitarian social (or government) objective. In practical terms, the relatively better off prime age males will do well, but as overall incomes are unlikely to return to their (not particularly satisfactory) 1988 level for several years, every one else will become absolutely and relatively poorer. This will be resisted, and it will therefore prove difficult to reduce expenditures in line with falling tax revenues, so that debt will grow, inflation will remain high, and prospects for economic recovery will be further jeopardised. The political task will be to devise mechanisms for cutting expenditure at low political cost.

The main mechanism available to achieve this budget reduction is the decentralisation of responsibility for many social services to local government level, forcing them to impose local taxes if they are to finance these expenditures. The political odium will be deflected from the central government, and as local governments are typically small (serving communities of less than 1,000 persons) and inexperienced, they will find it hard to raise the necessary tax revenue, and will be forced to cut expenditures, that is, to provide inadequate levels of local social services. They will also face the same political economy problem of obtaining support for tax revenues that most logically should be levied on property (being immobile) owned by the majority, to finance services received by a minority. The end result will be that inequalities will take on a regional component as well.

A second, less politically satisfactory method is inflation, which erodes pension and other payments, while benefitting existing mortgage holders and owners of real

---

<sup>25</sup> Kornai (1992) argues similarly that the private sector should be offered a 'deal' - to pay taxes in exchange for services received, notably legal protection for their property.

capital. This will undoubtably strengthen pressures for increased private provision of pensions and other forms of social insurance, but it will also make it more difficult to provide them, unless the government introduces indexed financial instruments, at some cost to the budget in foregone seigniorage. Already the conceptual step of separating the insurance and redistributive aspects of pensions has been taken in the form of operation of the Social Security Fund, and this should be seen as a logical step in protecting the efficient or non-redistributive element of the budget.

## 7. Conclusions

The main conclusion from this rather pessimistic analysis is that the case for reducing taxes is quite strong because of the extreme difficulty in ensuring an efficient and broad based tax system with high compliance. This in turn means that the pressure to cut expenditure is even higher. Given the difficulty of reducing expenditures, except in socially divisive or ethically unappealing ways, and given the inevitable erosion of the tax base through increased private activity and the fall in domestic demand, this strengthens the strong case for increasing the breadth of both direct and indirect tax bases, and tightening up tax administration to ensure compliance. Political dynamics are likely to reduce the redistributive element of the tax system both directly (by preserving regressive transfers) and indirectly, by reducing the 'shadow taxes', or the difference between competitively determined wages and those paid in the state sector. Given the high level of unavoidable claims on the budget, and the need to provide at least a minimal safety net, the room for further tax reductions is small. Some taxes, notably those more like user charges of the scarce infrastructure (roads, telephones) should probably increase, as should some indirect (luxury) taxes if income tax evasion remains a problem. While there may be a case for lowering SSC, it is probably more important to improve the incentive aspects of that tax (by linking it to payments and making it more like a contribution) as well as adjusting the retirement age, and possibly indexing pensions to the CPI rather than earnings. The end result may well be a lower SSC, though correctly accounted, the SSC is currently running a surplus on its pension activities (Augusztinovics, 1993). If the SSC is set at a rate adequate for the restructured pension system, other taxes may have to be increased to make up the shortfall currently paid for by the surplus.

We come back to the theoretical determinants of the optimal tax rate. Given the unavoidable claims on the budget and the attitudes to inequality currently revealed by the political process, if the degree of substitutability between taxed and untaxed revenue can be reduced, taxes should be raised, and budgetary pressures reduced. This is the heart of the argument for broad-based taxes, and for reducing loopholes. If this is done, then the unavoidable substitutability between work and leisure remains, and the econometric evidence suggests that this is low, and may have been greatly exaggerated by those

pushing for the supply-side revolution of tax cuts, first in the US, but increasingly elsewhere. Slemrod (1992) reviews the evidence and finds a new consensus about the "downward revaluation of the responsiveness to taxation of real variables" (Slemrod, 1992, p252). If this is accepted, then so is the case for more progressive tax systems than became fashionable in the 1980s. Nevertheless, it is difficult to escape the conclusion that Hungary will need to reduce and reform the expenditure side of the budget.

## References

Amsden, A. H. (1989) *Asia's next giant: South Korea and Late Industrialisation*, Oxford University Press

Augusztinovics, Maria (1993) 'The social security crisis in Hungary', chapter 16 in *Hungary: an Economy in Transition*, edited by István P. Székely and David M.G. Newbery.

Arrow, Kenneth J. (1962) 'The Economic Implications of Learning by Doing', *Review of Economic Studies*, XXIX, June.

Aschauer, D.A. (1989) 'Public Investment and Productivity Growth in the Group of Seven', *Economic Perspectives*, 3, 17-25.

Atkinson, A.B. (1970) 'On the measurement of inequality', *Journal of Economic Theory*, 2, 244-63.

Atkinson, A.B. and J. Mickelwright (1992) *Economic Transformation in Eastern Europe and the Distribution of Income*, Cambridge: CUP.

Atkinson, A.B. and J.E. Stiglitz, (1980) *Lectures on Public Economics*, McGraw-Hill.

Bardhan, Pranab and John Roemer, (1992) 'Market Socialism: A Case for Rejuvenation', *Economic Perspectives*, 6(3), 101-16.

Deaton, Angus (1987) 'Econometric Issues for Tax Design in Developing Countries' Ch 4, pp 92-113 of Newbery and Stern (1987).

Deaton, Angus and Nicholas Stern, (1986) 'Optimally Uniform Commodity Taxes, Taste Differences, and Lump-sum Grants',

Gatsios, K. (1992) 'Privatization in Hungary: Past, Present and Future', mimeo, DAE, Cambridge and CEPR.

Gersovitz, M, (1987) 'The Effects of Domestic taxes on Foreign Private Investment' ch 23, pp 615-36 of Newbery and Stern (1987).

Gil Díaz, Francisco (1987) 'Some Lessons from Mexico's Tax Reform' ch 12, pp 333-60, of Newbery and Stern (1987)

Hare, P.G. (1990a) 'Reform of enterprise regulation in Hungary—from "tutelage" to market', *European Economy*, 43 March, 35-54.

Heller, Peter and Jack Diamond (1990) *International Comparisons of Government Expenditure Revisited: The Developing Countries, 1975-86*, Occasional Paper 69, Washington: International Monetary Fund

HMSO, (1992a) *Economic Trends*, January 1992, Central Statistical Office, London: HMSO.

HMSO, (1992b) *Social Trends*, Central Statistical Office, London: HMSO.

Holzman, Robert (1989) 'The Welfare Effects of Public Expenditure Programs Reconsidered', IMF Working Paper WP/89/62, Washington: International Monetary Fund

Hungarian Central Statistical Office (1987) *Statistical Yearbook 1985*, Budapest.

Hungarian Central Statistical Office (1991a) *Statistical Yearbook 1989*, Budapest.

Hungarian Central Statistical Office (1991b) *Yearbook of Economic Statistics 1990*, Budapest.

Hungarian Ministry of Finance, (1992) *Economic Policy 1993-94*, English version with changes approved by Parliament, Dec 1, 1992

IMF (1990) *Government Financial Statistics Yearbook 1990*, International Monetary Fund, Washington DC

IMF (1991) *Government Financial Statistics Yearbook 1991*, International Monetary Fund, Washington DC

Köllö, János (1993) 'The transformation of shop floor bargaining in Hungarian industry', chapter 15 in *Hungary: an Economy in Transition*, edited by István P. Székely and David M.G. Newbery.

Koltay, Jenő (1993) 'Tax reform in Hungary', chapter 14 in *Hungary: an Economy in Transition*, edited by István P. Székely and David M.G. Newbery.

Kopits, George (1991) 'Fiscal Reform in European Economies in Transition', IMF Working Paper WP/91/43, International Monetary Fund, Washington DC.

Kornai, János (1992) 'The Post-Socialist Transition and the State: Reflections in the Light of Hungarian Fiscal Problems', *American Economic Review*, Papers and Proceedings, 82(2), May, 1-21

Korani, J. and A. Matits, (1987), 'A vállalatok nyereségének bürokratikus ujraelosztása', Budapest: KJK

Kupa, M. and G. Fajth (1990) *The Hungarian Social-Policy Systems and Distribution of Incomes of Households*, Ministry of Finance, Budapest.

Jarvis, Sarah and John Mickelwright (1992) 'The Targeting of Family Allowances in Hungary', paper presented to World Bank Conference on *Public Expenditures and the Poor: Incidence and Targeting*, June 17-19, Washington DC

Mihályi, Péter, 'Hungary: a unique approach to privatisation - past, present and future', chapter 6 in *Hungary: an Economy in Transition*, edited by István P. Székely and David M.G. Newbery.

Milanovic, Branco (1991) 'Poverty in Eastern Europe in the Years of Crisis, 1978 to 1987: Poland, Hungary and Yugoslavia', *World Bank Economic Review* 5 (3), 87-205.

Mirrlees, J.A. (1979) 'The Theory of Optimal Taxation', in K.J. Arrow and M.D. Intriligator, eds. *Handbook of Mathematical Economics*. Amsterdam: North-Holland.

Newbery, D.M. (1989) 'Cost recovery from optimally designed roads', *Economica*, vol 56, pp 165-85.

Newbery, D.M. (1990a) 'Pricing and Congestion: Economic Principles Relevant to Pricing Roads', *Oxford Review of Economic Policy*, Vol 6 (2), 22-38.

Newbery, D.M. (1990b) 'Tax Reform, Trade Liberalisation and Industrial Restructuring in Hungary', *European Economy*, No 43, Mar 1990, 67-95.

Newbery, D.M. (1991) 'An Analysis of the Hungarian Tax Reform', paper presented to the conference *Eastern European Transformation*, Princeton, May 3-4, 1991. mimeo, DAE, Cambridge

Newbery, D.M. (1992a) 'Sequencing the Transition', pp 181-99 in *The Transition of Socialist Economies Symposium 1991*, ed. H. Siebert. Tübingen, J.C.B. Mohr (Paul Siebeck), Tübingen. Also published at CEPR Discussion Paper 575, 1991.

Newbery, D.M. (1992b) 'The Safety Net during Transformation: Hungary', chapter 11, *The Emergence of Market Economies in Eastern Europe*, ed. Christopher Clague and Gordon C. Rausser, Basil Blackwell, Oxford and Cambridge, Mass.

Newbery, D.M. (1992c) 'The Role of Public Enterprises in the National Economy' *Asian Economic Review*,

Newbery, D.M. and N.H. Stern (eds) (1987) *The Theory of Taxation for Developing Countries*, Oxford, Clarendon Press.

Newbery, D.M. and P. Kattuman (1992) 'Market Concentration and Competition in Eastern Europe', *The World Economy* 1992, 315-34. Also issued as CEPR Discussion Paper No. 664.

OECD (1991), *Historical Statistics, 1960-1989*, Paris: OECD/

Perrotti, Roberto (1992) 'Income Distribution, Politics, and Growth', *American Economic Review*, Papers and Proceedings, 82(2), May, 311-6.

Rodrik, D. (1992), 'Political Economy and Development Policy', *European Economic Review*, Vol 36, Nos 2/3, April, 329-336

Sárközy, Tamás (1993) 'A legal framework for the Hungarian transition, 1989-91', chapter 13 in *Hungary: an Economy in Transition*, edited by István P. Székely and David M.G. Newbery.

Slemrod, Joel (1992) 'Do Taxes Matter? Lessons from the 1980s', *American Economic Review*, Papers and Proceedings, 82(2), May, 250-6.

Stadler, János, (1993) 'Competition policy in transition', chapter 7 in *Hungary: an Economy in Transition*, edited by István P. Székely and David M.G. Newbery.

Stern, N.H. (1976), 'On the Specification of Models of Optimal Income Taxation', *Journal of Public Economics*, 6(1,2), July-Aug, 123-62.

Stern, N.H. (1987), 'The Theory of Optimal Commodity and Income Taxation: An Introduction', ch 2 of Newbery and Stern (1987).

Stigler G.J. (1971) 'The Theory of Economic Regulation', *Bell Journal of Management Science*.

Szalai, Julia (1991) 'Hungarian Transition and Social Policy', paper presented to IWM Workshop on *Social Costs of the Political and Economic Transformation of the CSFR, Hungary and Poland*, Institut für die Wissenschaften vom Menschen, Vienna, 15-17 November, 1991.

Székely, István P. and David M.G. Newbery (1993) (eds) *Hungary: an Economy in Transition*, Cambridge: CUP.

Tirole, J. (1991) 'Privatization in Eastern Europe: Incentives and the Economics of Transition', paper prepared for NBER Macroeconomics Meetings, March 8-9, 1991.

UN (1987), *Industrial Statistics Yearbook 1988 Volume 1*, United Nations, Geneva.

Várhegyi, Eva (1993) 'The modernisation of the Hungarian banking sector', chapter 9 in *Hungary: an Economy in Transition*, edited by István P. Székely and David M.G. Newbery.

World Bank (1991) *Hungary: Reform of Social Policy and Expenditures*, World Bank, Washington DC.

World Bank (1992a) *Hungary: Reform and Decentralisation of the Public Sector*, World Bank, Washington DC.

World Bank (1992b) *World Development Report 1992*, World Bank, Washington DC.

## Appendix: Data Sources

Figs. 1 and 2 are taken from Kopits (1991). The left of each pair of columns is for 1985, the right for 1989 (except for Poland, Belgium, Portugal, and UK, where they are for 1988, and for Ireland and Spain they are for 1987). EC average is weighted by GDP excluding Luxembourg and Greece. Data for Italy and Portugal refer to central government. His sources are IMF (1990) and national authorities. 'Enterprise transfers' include product-specific prices subsidies, explicit interest rate subsidies, and debt service on behalf of enterprises and institutions.

Fig 3 is derived from HMSO (1992a, p122), which gives international comparisons of taxes and social security contributions in 20 OECD countries as shares of GDP at factor cost. These have been adjusted to proportions of GDP at market prices. Figures for Hungary come from Koltay (1993, table 14.4) and are cited as OECD estimates, and perhaps therefore comparable. Note that VAT is not separately distinguished, and all indirect taxes (turnover and customs) have therefore been included in 'other ind'.

Fig. 4 is derived partly from World Bank (1991, Table 2.1), which gives government current expenditures on various items of social welfare as shares of GDP, taken from the OECD Social Databank. The balance is the difference between current disbursements, taken from OECD *Historical Statistics 1960-1981*, Table 6.5, and the total social expenditure. Current disbursements in turn consist of final consumption expenditures, interest on the public debt, subsidies and social security transfers to households by general government. Figures for Hungary come from World Bank (1992a, Table 5.1) and exclude capital expenditure.

Figs. 5 and 6 are taken from text Tables 1 and 2, described below and in the text, and give the average of the two estimates for each of the two periods 1981-83 and 1984-86. The tables suggest that the four figures typically differ by little.

Fig. 7 is derived from data from Kupa and Fajth (1990) which is summarised in Appendix table A10. Original income is household income from primary, secondary and other activities, but excluding state pensions; gross income is original income plus all cash transfers including pensions and family allowances, etc.; final income is gross income plus benefits in kind and subsidies minus taxes. Fig. 8 is derived from HMSO (1992a, p161), summarised in table A11. Definitions in fig. 8 are the same as fig. 7, and both graphs have been scaled so that final income for the average household is 100 in each country. The vertical scales are identical so the two figures are directly comparable. Figs 9 and 10 graph the ratios of total benefits (all cash transfers, subsidies and social income in kind) and total taxes (direct and indirect) to final income. Figs. 11 and 12 are taken from Newbery and Kattuman (1992), and are self-explanatory, though it should be noted that data are for enterprises, not establishments.

Figs. 13 and 14 are derived from IMF *Government Financial Statistics 1991*. Fig. 15 is derived from IMF *Government Financial Statistics 1991*.

Tables 1 and 2 are taken from Heller and Diamond (1990), derived from data in the 1988 edition of the IMF *Government Finance Statistics Yearbook*. Their procedure is to estimate an equation for the category of expenditure either using the cross-section data for the period in question (averages of three adjacent years) or using a pooled regression for the four time periods and all countries. The determinants of functional expenditure categories are given as a share of

gross domestic product, and depend on GDP per capita, the age structure of the population, the infant mortality rate, the share of labour force in agriculture, industry, and the share of population in urban areas, the pupil-teacher ratio, the population growth rate in urban areas, the share of total non-administrative government expenditure in GDP, the share of manufacturing output in GDP, in exports, the share of agriculture in GDP, foreign debt to GDP, percentage of pupils reaching grade six, the share of direct taxes in total revenue, and a percentage of population with access to clean water supply (Heller and Diamond, 1990, Table 1). The international expenditure comparison index for a particular expenditure category is then the ratio of the actual share in GDP to that predicted by the functional equation. It should be noted that the explanatory power of the cross-section regression equations is quite low, and the  $R^2$  in Table 1 are less than 0.2 except for education (0.27), health (0.37), social security (0.6).

Table 2 gives a breakdown of government expenditure by economic category using a rather different set of explanatory variables to predict the expenditure levels. These explanatory variables are the ratios to GDP of the functional expenditure categories listed in Table 1 with the exception of agriculture, GNP per capita, long term foreign debt, and the shares of labour in agriculture and manufacturing. (The values for  $R^2$  are rather higher here than in Table 1, varying from 0.21 for interest payments to between 0.5 and 0.7 for most of the remaining items.)

### Measurement of the Public Sector

The Hungarian budget is both decentralised and complex, and many of the transactions between its component parts are not netted out or consolidated. As a result, there is an unknown amount of double-counting which overstates the ratio of revenue and expenditure to GDP. The IMF *Government Financial Statistics* (GFS) makes certain adjustments, not counting some of the changes in credits and cash balances and consolidating some of the components. The result is that the GFS figure for tax revenue for 1990 is 2.7 per cent of GDP lower than the Hungarian estimate. (World Bank, 1992a, Annex 2). The GFS number is not a complete consolidation, however, and the World Bank estimates that full consolidation might reduce the share of general government expenditure in 1991 from 58 per cent to between 47 and 49 per cent (World Bank, 1992a, page vi). Recorded general public services expenditures and other economic affairs and services expenditures are considered the most affected, and the estimated effect of consolidation is found by comparing Hungarian levels of expenditure on these items with EC averages.

Table A1

## General Government Budget

billions of current forints

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Memo: GDP current market prices	779.9	847.9	896.5	978.5	1033.7	1088.8	1226.4	1452.2	1730.4	2080.9
Total Revenue	475.8	501.6	545.6	594.8	620.1	688.6	740.0	897.5	1046.3	1209.0
Tax Revenue	393.0	420.6	474.3	514.6	515.9	588.0	651.3	765.5	863.4	1019.8
Personal income tax	3.9	4.3	8.0	8.7	9.9	8.4	10.0	66.3	94.2	138.6
Enterprise profits taxes	107.6	102.2	117.4	123.7	98.9	121.2	142.1	118.6	140.2	136.7
Social security	63.8	74.5	81.6	114.3	134.3	148.5	157.5	193.5	271.3	286.5
Property	22.6	22.5	30.6	38.8	28.3	23.2	24.9	7.0	6.2	4.1
Domestic tax on goods & services	160.9	180.3	188.9	175.6	173.0	181.5	207.6	318.5	300.4	413.4
Other	34.2	36.8	47.8	53.5	71.5	105.2	109.2	61.6	51.1	40.5
Non-tax revenue	81.3	80.9	70.2	78.5	102.0	98.2	88.7	128.5	175.9	189.2
Entrep. & property income	44.1	44.4	50.8	56.4	61.5	59.4	59.7	71.7	91.8	
Fees, sales, fines	3.8	3.8	2.6	3.3	3.4	9.4	10.2	13.0	15.2	
Other non-tax	33.4	32.7	16.8	18.8	37.1	29.4	18.8	43.8	68.9	
Capital revenue	1.5	0.1	1.1	1.7	2.2	2.4	0.0	3.5	7.0	
Total expenditure & net lending	500.5	519.2	555.1	581.2	631.9	720.2	787.2	896.9	1088.8	
Total expenditure	498.5	519.2	555.5	581.2	632.6	719.0	786.6	895.8	1087.4	1195.7
Current expenditure	416.9	440.2	479.9	503.8	550.2	631.5	698.5	787.8	964.4	1102.4
Wages	58.5	63.2	64.2	68.8	82.7	90.8	92.9	122.9	141.6	166.6
Other purchases of goods & services	90.4	99.1	94.6	103.2	112.7	117.0	146.8	184.2	236.0	227.6
Interest payments	13.3	14.2	8.6	12.7	11.1	22.7	24.6	41.0	54.4	62.2
Subsidies & transfers	254.7	263.7	312.5	319.1	343.7	401.0	434.2	439.7	532.4	646.0
Transfers	93.2	101.6	112.1	126.1	138.1	149.5	178.4	226.2	290.2	
Subsidies	161.5	162.1	200.4	193.0	205.6	251.5	255.8	213.5	242.2	
Capital expenditure	79.7	76.6	77.9	80.4	82.4	87.5	99.9	108.0	123.0	96.3
Fixed capital formation	55.3	50.9	68.9	71.0	71.8	75.2	70.5	90.0	90.4	58.4
Capital transfers	24.4	25.7	9.0	9.4	10.6	12.3	29.4	18.0	32.6	37.9
Adjustment for reporting diff. between intergovernment grants & transfers	1.9	2.4	-2.3	-3.0			-11.8			
Net lending	2.0		-0.4		-0.7	1.2	0.6	1.1	1.4	
Overall balance	-24.7	-17.6	-9.5	13.6	-11.8	-31.6	-47.2	0.6	-42.5	13.3

Source: IMF Government Financial Statistics

Table A2

**General Government Budget**  
**As percentages of GDP**

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<b>Tax Revenue</b>	<b>50.4</b>	<b>49.6</b>	<b>52.9</b>	<b>52.6</b>	<b>49.9</b>	<b>54.0</b>	<b>53.1</b>	<b>52.7</b>	<b>49.9</b>	<b>49.0</b>
Personal income tax	0.5	0.5	0.9	0.9	1.0	0.8	0.8	4.6	5.4	6.7
Enterprise profits taxes	13.8	12.1	13.1	12.6	9.6	11.1	11.6	8.2	8.1	6.6
Social security	8.2	8.8	9.1	11.7	13.0	13.6	12.8	13.3	15.7	13.8
Property	2.9	2.7	3.4	4.0	2.7	2.1	2.0	0.5	0.4	0.2
Domestic tax on goods & services	20.6	21.3	21.1	17.9	16.7	16.7	16.9	21.9	17.4	19.9
Other	4.4	4.3	5.3	5.5	6.9	9.7	8.9	4.2	3.0	1.9
 Non-tax revenue	 10.4	 9.5	 7.8	 8.0	 9.9	 9.0	 7.2	 8.8	 10.2	 9.1
Entrep. & property income	5.7	5.2	5.7	5.8	5.9	5.5	4.9	4.9	5.3	
Fees, sales, fines	0.5	0.4	0.3	0.3	0.3	0.9	0.8	0.9	0.9	
Other non-tax	4.3	3.9	1.9	1.9	3.6	2.7	1.5	3.0	4.0	
 Capital revenue	 0.2	 0.0	 0.1	 0.2	 0.2	 0.2	 0.0	 0.2	 0.4	
 Total expenditure & net lending	 64.2	 61.2	 61.9	 59.4	 61.1	 66.1	 64.2	 61.8	 62.9	
<b>Total expenditure</b>	<b>63.9</b>	<b>61.2</b>	<b>62.0</b>	<b>59.4</b>	<b>61.2</b>	<b>66.0</b>	<b>64.1</b>	<b>61.7</b>	<b>62.8</b>	<b>57.5</b>
 Current expenditure	 53.5	 51.9	 53.5	 51.5	 53.2	 58.0	 57.0	 54.2	 55.7	 53.0
Wages	7.5	7.5	7.2	7.0	8.0	8.3	7.6	8.5	8.2	8.0
Other purchases of goods & services	11.6	11.7	10.6	10.5	10.9	10.7	12.0	12.7	13.6	10.9
Interest payments	1.7	1.7	1.0	1.3	1.1	2.1	2.0	2.8	3.1	3.0
Subsidies & transfers	32.7	31.1	34.9	32.6	33.2	36.8	35.4	30.3	30.8	31.0
Transfers	12.0	12.0	12.5	12.9	13.4	13.7	14.5	15.6	16.8	
Subsidies	20.7	19.1	22.4	19.7	19.9	23.1	20.9	14.7	14.0	
 Capital expenditure	 10.2	 9.0	 8.7	 8.2	 8.0	 8.0	 8.1	 7.4	 7.1	 4.6
Fixed capital formation	7.1	6.0	7.7	7.3	6.9	6.9	5.7	6.2	5.2	2.8
Capital transfers	3.1	3.0	1.0	1.0	1.0	1.1	2.4	1.2	1.9	1.8
Adjustment for reporting diff. between intergovernment grants & transfers	0.2	0.3	-0.3	-0.3	0.0	0.0	-1.0	0.0	0.0	0.0
Net lending	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.3	0.0	-0.0	0.0	-0.1	0.1	0.0	0.1	0.1	0.1	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
 Overall balance	 -3.2	 -2.1	 -1.1	 1.4	 -1.1	 -2.9	 -3.8	 0.0	 -2.5	 0.6

Source: Table A1

Table A3

Expenditures by function	General Government Expenditure									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
billions of current HUF										
TOTAL EXPENDITURES	498.5	519.2	555.5	581.2	632.6	719	786.6	895.8	1087.4	1194.1
Gen Pub Services and Public Order	90.2	98.9	89.7	99.3	94.2	139.5	160.3	153.6	161	204.4
Defence	19.1	20.2	21.9	22.6	37.7	25.8	28.4	38	35.2	39.3
Education	35.4	38	41.2	44.1	50.1	55.4	74.4	85	104.3	143.2
Health	30.1	33	36.5	39.4	44.3	48.8	57.1	50.4	68.5	102.7
Soc Sec & Welfare + housing	124.4	134.6	145.2	158.4	175.2	188.7	220.2	268.3	320.3	391.4
Rec Cult and Relig	13.7	13.9	15.9	16.8	19.1	20.8	14.4	18.7	32	36.3
Energy, industry constr	73.2	72.8	84.4	82.9	85.1	97.9	108.1	104.3	53.8	54.7
ag fish forest	34.9	38.6	35.7	33.7	35.7	36.1	44.3	49.6	42.4	52.8
transp & comm	43.2	39.9	38.6	37.7	33.6	43.4	38.4	42	51.6	64.9
other econ	60.4	60.1	69.3	66.3	81.1	94	100.4	111.2	148.8	118.3
other expenditure	21.8	22.2	39.1	48.9	43	43.8	30.5	72.3	165.4	99.4
unallocated adjustment	-46	-50.6	-61.7	-68.9	-66.5	-75.1	-89.9	-97.6	-95.9	-113.3
sum of above	500.4	521.6	555.8	581.2	632.6	719.1	786.6	895.8	1087.4	1194.1
difference	-1.9	-2.4	-0.3	0	0	-0.1	0	0	0	0
current expend	416.9	440.2	479.9	503.8	550.2	631.5	698.5	787.8	964.4	1071.1
capital exp	79.7	76.6	77.9	80.4	82.4	87.5	99.9	108	123	96.4
adjustment	3.8	4.8	-2	-3	0	0.1	-11.8	0	0	26.6
deficit/surplus	-24.7	-17.6	-9.5	13.6	-11.8	-31.6	-47.2	0.6	-42.5	9.7
total revenue	475.7	504	546.3	594.8	620.8	687.5	739.4	896.4	1044.9	1203.8

Source: IMF(1991) GFS VB p304; IPRHung.Wk1

Table A5

	Hungary Enterprise Profits						billions forints	
	1980	1984	1985	1986	1987	1988	1989	1990
GDP	721	978.4	1033.7	1088.8	1226.4	1409.5	1730.4	2080.9
less								
Gross labour income	321.9	433.4	473.3	515.4	561.2	676.4	792.2	974.1
Indirect taxes	249.7	338.8	356	364.8	415.7	524.0	649.9	759.5
of w taxes on products	137.5	167.8	172	171.3	202	271.9	309.4	
other ??SSC	112.2	171	184	193.5	213.7	252.1	340.5	
Plus: indirect subsidies	136.8	168.8	187.6	219.2	238.8	217.2	201.5	178.2
Gross operating surplus of enterprises	286.2	375.0	392.0	427.8	488.3	426.3	489.8	525.5
Less: other deductions					53.1	53.1	53.1	66.7
Gross ent profit before tax	286.2	375.0	392.0	374.7	435.2	373.2	436.7	458.8
Less: depreciation	89	105.7	108.3	103.9	103.9	103.9	103.9	160.8
other incl div	30	44	43.6	53.1	50.2	46.4	42.2	
Profits (CSO def)	167.2	225.3	240.1	257.7	313.3	247.2	297.6	
profits + other (div)	197.2	269.3	283.7	310.8	363.5	293.6	339.8	
Net profits before tax	197.2	269.3	283.7	270.8	331.3	269.3	332.8	298.0
less: direct tax on income		177.2		221.3	221.3	221.3	221.3	192.0
plus: subsidies after profit		9.1		7.4	7.4	7.4	7.4	2.4
less: profit sharing		12.9		15.3	15.3	15.3	15.3	32.7
=Net retained earnings		88.3		41.6	102.1	40.1	103.6	75.7
Total subsidies		177.9		226.6	246.2	224.6	208.9	180.6
Ratios:		percentages						
Direct taxes/net profits %		65.8		81.7	66.8	82.2	66.5	64.4
Direct taxes/gross profits		47.3		59.1	50.9	59.3	50.7	41.8
other ind taxes/gross wages		39.5		37.5	38.1	37.3	43.0	

	Hungary Enterprise Profits							
	As percent of GDP							
Gross labour income	44.6	44.3	45.8	47.3	45.8	48.0	45.8	46.8
indirect taxes	34.6	34.6	34.4	33.5	33.9	37.2	37.6	36.5
indirect subsidies	19.0	17.3	18.1	20.1	19.5	15.4	11.6	8.6
Gross enterprise profits	39.7	38.3	37.9	34.4	35.5	26.5	25.2	22.0
Direct taxes		18.1		20.3	18.0	15.7	12.8	9.2
Net retained earnings		9.0		3.8	8.3	2.8	6.0	3.6
Direct taxes less all subsidies		-0.1		-0.5	-2.0	-0.2	0.7	0.5
Direct taxes less after-tax subsidies		17.2		19.6	17.4	15.2	12.4	9.1
Direct taxes+ind taxes - all subs		34.6		33.0	31.9	36.9	38.3	37.0

Hungary Enterprise Profits  
At constant 1981 HUF, deflated by GDP deflator  
billions of 1981 HUF

Direct taxes less after-tax subsidies	141.1	163.5	151.0	127.4	107.2	75.6
Direct taxes less all subsidies	-0.6	-4.0	-17.6	-2.0	6.2	4.5
Direct taxes+ind taxes - all subs	283.9	274.7	275.9	310.2	331.9	307.2

Sources: CSO Yearbook 1985, 1989; table 5.12

Profit.Wk1

Table A6

Financial data of enterprises 1989-90  
Income statement by economic sector

million HUF

Financial item	Col	All sectors		State enterprise		Ltd liability Co		Co. limited by share	
		1989	1990	1989	1990	1989	1990	1989	1990
Sales	5	5267590	5925982	3892994	3724923	176260	731830	187304	469820
wages	8+9	453073	544870	299101	312927	14812	65829	13594	34674
social security	10	176350	204544	121684	125733	5062	21584	5263	12923
depreciation	12	114395	120303	92167	90691	1305	6503	1832	5120
other costs	6,7,11,13	4301639	4861799	3214734	3065080	143163	608116	157110	405072
total costs	14	5045457	5731516	3727686	3594431	164342	702032	177799	457789
"gross" profit	15	222133	194466	165308	130492	11918	29798	9505	12031
other receipts	16	9019	28687	2285	9124	1888	7701	236	7585
profit before tax	17	231152	223153	167593	139616	13806	37499	9741	19616
profit tax	18	104669	84441	80918	58923	4152	11752	3452	5252
Profit after tax	19	126483	138712	86675	80693	9654	25747	6289	14364
out of which state dividend	20	9222	26418	7066	26321	303	6	228	40
VAT on Invest non deductible	21	18675	11426	15635	9121	228	743	313	450
Balance		35794	65251	12939	18159	6419	21725	3398	10088
Net Income	22	62792	35617	51035	27092	2704	3273	2350	3786
Gross wages (GW)	10+11	629423	749414	420785	438660	19874	87413	18857	47597
Gross profit (GP)	17+12	345547	343456	259760	230307	15111	44002	11573	24736
Gross wage+gross profit		974970	1092870	680545	668967	34985	131415	30430	72333
Profit tax + state dividend	18+20	113891	110859	87984	85244	4455	11758	3680	5292

## Ratios: percentages

Gross profit/GW+GP		35.4	31.4	38.2	34.4	43.2	33.5	38.0	34.2
Depreciation/gross profit		33.1	35.0	35.5	39.4	8.6	14.8	15.8	20.7
Profits tax/profit %	18/17	45.3	37.8	48.3	42.2	30.1	31.3	35.4	26.8
soc sec/wages		38.9	37.5	40.7	40.2	34.2	32.8	38.7	37.3
SS/wage+SS		28.0	27.3	28.9	28.7	25.5	24.7	27.9	27.2
gross wages/(gross wage+gross profit)		65.2	70.4	62.0	66.5	60.0	70.7	62.5	73.5
net profit/GW+GP		12.0	9.4	11.1	7.3	35.7	23.6	26.0	20.0
state dividend/net profit bef tax		4.0	11.8	4.2	18.9	2.2	0.0	2.3	0.2
state div/net after tax profit		7.3	19.0	8.2	32.6	3.1	0.0	3.6	0.3
Profit tax+state dividend/net profit		49.3	49.7	52.5	61.1	32.3	31.4	37.8	27.0

Source: CSO Yearbook 1990 table 1.2 p138-9

Profit Wk1

Table A7

Hungary Income of the population

	Household Disposable Income						billions forints		Estimate		
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Gross wage bill from legal entities						389.7	425.2	530.6	629.1	773.2	993.8
labour income from private activities						101.8	106.3	115.4	114.1	155.4	201.7
Total money labour income (gross)						491.5	531.5	646.0	743.2	928.6	1195.5
less: taxes					40.9	41.7	44.9	123.3	147.2	187.0	255.1
Total money income (net)						449.8	486.6	522.7	596.0	741.6	940.4
Labour income in kind (mainly own production)						39.2	46.0	51.5	56.9	82.0	105.5
Other money income (net) (interest and rental income)						0.1	-1.1	11.0	12.8	44.8	54.5
Total income before benefits	339.2	361	388.8	420.5	454.2	489.1	531.5	585.2	665.7	868.4	1100.4
Social benefits (pensions, health, f)	93.9	102.4	111.8	125.6	137.3	148.1	162.8	205.2	256.1	323.8	434.5
Social benefits in kind	68.1	75.8	80.7	87.9	97	103.4	112.7	138.5	178.3	238.6	316.8
Disposable income	501.2	539.2	581.3	634	688.5	740.6	807.0	928.9	1100.1	1430.8	1851.7
Total benefits less direct taxes					172.6	209.8	230.6	220.4	287.2	375.4	496.2

Sources: CSO Yearbooks; Wages.Wk1

Table A8

Hungary Income of the population, 1981 HUF billions

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Gross wage bill from legal entities						278.5	279.7	302.2	306.3	285.4	269.7
labour income from private activities						72.7	69.9	65.7	55.5	57.4	54.7
Total money labour income (gross)						351.2	349.7	367.9	361.8	342.7	324.4
less: taxes					32.9	29.8	29.5	70.2	71.7	69.0	69.2
Total money income (net)						321.4	320.1	297.7	290.1	273.7	255.2
Labour income in kind (mainly own production)						28.0	30.3	29.3	27.7	30.3	28.6
Other money income (net) (interest and rental income)						0.1	-0.7	6.3	6.2	16.5	14.8
Total income before benefits	339.2	337.7	338.9	338.4	341.7	349.5	349.7	333.3	324.1	320.5	298.6
Social benefits (pensions, health, f)	93.9	95.8	97.5	101.1	103.3	105.8	107.1	116.9	124.7	119.5	117.9
Social benefits in kind	68.1	70.9	70.4	70.7	73.0	73.9	74.1	78.9	86.8	88.1	86.0
Disposable income	501.2	504.4	506.8	510.3	518.0	529.2	530.9	529.1	535.5	528.1	502.5
Disp. Inc. Index 1981 = 100	100.0	100.6	101.1	101.8	103.3	105.6	105.9	105.6	106.9	105.4	100.3
Total benefits less direct taxes					138.9	149.9	151.7	125.5	139.8	138.5	134.7

Source: Table A7

Table A9 Percentage of total subsidy allocated to decile

Category	bottom decile	second decile	ninth decile	top decile	shares in subsidies	soc income + subsidies
rent	7.5	9.0	12.5	11.5	6.2	2.8
heating	8.3	9.0	10.8	10.2	14.9	6.6
water,sewage for state dwell	7.5	9.0	12.5	11.5	1.6	0.7
water,sewage for own occ dwel	13.3	12.6	8.1	7.7	4.2	1.9
mortgage payment	6.4	7.1	15.0	16.9	37.9	16.9
other housing invest subs	21.6	12.7	9.0	12.3	8.8	3.9
housing invest subs	9.2	8.2	13.9	16.1	46.7	20.8
all housing subsidies	9.1	8.7	12.8	13.9	73.5	32.8
all subsidies	9.5	9.0	12.1	12.7	100.0	44.6
personal net income	6.2	7.3	12.0	16.2		
mortgage subs/net income	102.3	97.0	124.9	104.7		
housing subs/net income	146.2	118.1	106.4	86.0		

Source: Kupa and Fajth (1990, Table 1.2.2./c) Housing.Wk1

Table A10 Hungary: Incomes, taxes, transfers, subsidies and benefits, per household 1989  
Index numbers, average final income = 100

deciles	Original HH incom	gross personal income	taxes duties	household transfers	net balance	social person income	in kind=2	3	4	cash transfers	2+3	all benefits 2+3	final income 1+2+3
1	30.2	50.9	-5.7	-0.6	44.6	18.7	9.9	20.7	28.6	49.3	73.2		
2	40.1	61.0	-7.8	-0.0	53.2	17.0	9.5	20.9	26.5	47.4	79.6		
3	46.5	66.4	-8.8	0.3	57.9	15.4	9.5	19.9	25.0	44.9	82.9		
4	50.0	70.3	-9.7	0.3	60.9	14.0	9.2	20.3	23.2	43.5	84.1		
5	54.5	75.0	-11.1	0.2	64.2	14.0	9.9	20.5	23.8	44.3	88.0		
6	62.9	82.4	-12.9	0.1	69.5	13.4	10.0	19.5	23.3	42.8	92.9		
7	73.9	92.5	-15.4	0.0	77.2	12.9	11.6	18.6	24.5	43.1	101.7		
8	85.6	103.1	-18.2	-0.2	84.7	11.9	10.8	17.5	22.6	40.2	107.3		
9	97.2	114.0	-20.8	0.1	93.2	11.3	13.7	16.8	25.0	41.8	118.2		
10	140.6	152.9	-30.2	-0.0	122.7	10.4	14.0	12.4	24.4	36.7	147.1		
total	71.8	90.3	-14.9	0.0	75.4	13.6	11.0	18.4	24.6	43.0	100.0		
Top/bottom	4.7	3.0	5.3	0.0	2.8	0.6	1.4	0.6	0.9	0.7	2.0		

Source: Kupa and Fajth (1990)

Table A11 UK decile groups of households ranked by equiv disposable income

deciles	original income	incash benefits	gross cash	direct taxes	disposable +NIC	indirect income	post tax	total tax	total inkind	total taxes	total benefits	Final inco
	total	total	total	total	total	total	total	total	total	total	total	Final inco
1	8.5	26.8	35.2	-5.7	29.5	-10.1	19.4	22.5	-15.8	49.2	41.9	
2	13.7	31.0	44.7	-5.8	38.8	-9.3	29.6	18.4	-15.1	49.4	48.0	
3	24.2	29.0	53.1	-7.3	45.8	-10.7	35.1	17.5	-18.0	46.5	52.6	
4	58.1	23.0	81.1	-13.7	67.4	-16.3	51.0	20.9	-30.0	43.9	71.9	
5	87.4	17.0	104.4	-20.2	84.2	-19.7	64.5	18.1	-39.9	35.1	82.6	
6	112.5	13.5	125.9	-24.8	101.1	-22.8	78.4	17.7	-47.6	31.1	96.0	
7	139.8	11.3	151.1	-31.5	119.6	-24.9	94.7	17.1	-56.4	28.4	111.8	
8	168.9	7.9	176.8	-37.8	139.1	-27.9	111.2	14.3	-65.6	22.2	125.5	
9	204.5	6.5	211.0	-46.4	164.6	-32.1	132.6	12.5	-78.5	19.0	145.1	
10	314.4	4.9	319.3	-69.9	249.4	-35.1	214.2	10.3	-105.1	15.2	224.5	
total	113.2	17.1	130.3	-26.3	104.0	-20.9	83.1	16.9	-47.2	34.0	100.0	
Top/bottom	37.1	0.2	9.1	12.2	8.4	3.5	11.0	0.5	6.6	0.3	5.4	

Source: Economic Trends 1992

