# Chapter 7

## Fiscal “reforms” and stabilizations

7.1) Introduction

Most accounts, old and new, of the end of the European hyperinflations of the 1920s attribute a key role to "fiscal reforms" implemented more or less simultaneously with the stabilizations[1]. Surprisingly, however, there has been little effort in detailing the nature and contents of these reforms. It is often emphasized that budgets were balanced very quickly after price stability has been achieved, but this fact in itself is not actually sufficient to establish that these reforms effectively took place. It is now recognized that inflation affects budget deficits in various respects, one of which the so called Oliveira-Tanzi effect, i. e. the fact that tax revenues are negatively affected by inflation[2]. Although on theoretical or *a priori* grounds the effects of inflation on the real value of tax revenues is said to be undetermined[3], a solid body of empirical research has been built providing evidence on negative effects of inflation over the real value of tax revenues in countries experiencing high inflations[4]. There are many indications of the importance of the Oliveira-Tanzi effect in the hyperinflation countries[5], so that it could be conjectured that the influence of price stability on deficits might very well have been an important part of the explanation for the sudden budgetary improvements observed after the end of the these hyperinflations. This chapter attempts to assess the extent of this possibility, which actually amounts to form a judgment on the "change in the fiscal regime", or the rational expectations explanations for these stabilizations.

This chapter's basic contention is that the presence of such fiscal "reforms" can be seriously disputed, once evidence is provided on the nature of fiscal measures undertaken along with stabilizations. It is shown, for instance, that reductions in expenditure played a minor role in balancing these countries budget, where this was achieved, the main contribution to budgetary improvement stemming from significant increases in tax

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[1] Most notably the recent views of T. Sargent(1982) and C. L. Holtfferich (1985).
[2] The classic case is Argentina, and the most usual references are V. Tanzi (1978 and 1977) and J. H. G. Oliveira (1967). The phenomenon is attributed most usually to lags between the fact that originates the tax and the effective collection of these taxes.
[3] L. H. Summers (1981) p. 191 and M. Friedman (1974) pp. 14-15.
[4] See V. Tanzi (1977 and 1978); V. Tanzi et al. (1987) B. B. Aghevli & M. S. Khan (1978)
[5] See, for example, C. Bresciani-Turroni (1937, pp. 66-67), F. D. Graham (1930, pp. 37-45) and P. C. Witt (1983) for Germany; Z. Landau & J. Tomaszewski (1985) pp. 43-44 for Poland; L. L. Ecker-Rácz (1933) pp. 110 for Hungary and E. März (1948) pp. 501-503 and J. Van Sickle (1931) for Austria.

revenues. Yet, if the Oliveira-Tanzi effect is present, a sudden stabilization should bring a very quick and possibly very strong recovery of tax revenues, which very clearly would have nothing to do with any kind of "reform". The relevance of alleged fiscal "reforms" for the end of the hyperinflations has to be established by distinguishing how much of the observed improvement in tax collection was due to "reforms" and how much was a consequence of price stability. The chapter is actually organized around this simple idea. The next three sections examine the fiscal measures undertaken during the stabilizations of Austria, Hungary, Poland and Germany. Section 7.5 brings an analytical interpretation of the role of fiscal policy in these episodes. The last section summarizes the main findings and comments briefly on the fiscal difficulties observed more generally during the early 1920s.

## 7.2) The League programs: Austria and Hungary

Although the evolution of economic policy in Austria and Hungary followed very specific paths, these countries share the origin of their problems - the sharp reductions in their territories and populations determined by the dismemberment of the Habsburg empire - and the fact they became basket cases of stabilization programs conceived and managed by the League of Nations, a more stringent and interventionist version of its outgrown, the IMF programs of our days. Indeed, the empire dismemberment has caused many problems, some of them of a fiscal nature. Tables 7-1 and 7-2, reporting annual fiscal accounts of the new republics, provide some indications in this direction.

**Table 7-1**
**Austria: closed accounts budgets, 1920-1924**
**(Millions of gold crowns)**

| | | | | 1923 - 1st half[c] | | 1923 -2nd half[d] | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1920[a] | 1921[a] | 1922[b] | estimate[f] | actual | estimate[f] | actual | 1923[e] | 1924[e] |
| Revenues | 211.7 | 281.4 | 215.1 | 158.4 | 210.5 | 188.7 | 272.8 | 483.3 | 623.4 |
| Expenditures | 567.5 | 673.8 | 672.5 | 299.5 | 296.5 | 269.4 | 296.7 | 593.2 | 632.4 |
| Deficit | 355.8 | 392.4 | 457.4 | 141.1 | 86.0 | 80.7 | 23.9 | 109.9 | 9.0% |
| Rev./Exp. | 37.3 | 41.8 | 32.0 | 52.9 | 71.0 | 70.0 | 91.9 | 81.5 | 98.6 |

SOURCES and OBSERVATIONS:(a )Fiscal years of 1919/1920 and 1920/1921, July to June, from J. V. Van Sickle (1931 pp. 66 and 72. (b) League of Nations estimate for October of 1922 annualized, from League of Nations (1926a) p. 33. (c) Ibid. p. 49. (d)Difference between values for 1923 full year and 1923 first half. (e) Full fiscal year, January-December, ibid. pp. 110-111. (f) Original estimates of

League's program. All values converted into gold crowns with annual average exchange rates from J. van Walré de Bordes (1924) pp. 114-139.

It is important to note first that in both cases some nominal figures have been deflated with the help of annual averages of exchange rates which might have produced distortions, but in both cases the use of alternative methods of deflation - i. e. wholesale prices - does not alter the interesting result that the levels of expenditure before and after the stabilizations - which was achieved in the end of 1922 in Austria and in the beginning of 1924 in Hungary - were roughly similar. This is somewhat surprising given the unambiguously orthodox orientation of the programs implemented by the League in each country. The composition of expenditures, however, was markedly different in both cases reflecting important adjustments of these economies to their new economic realities.

For the first budgets of the new Austrian Republic, food subsidies, the operational deficit of state undertakings, especially railways, and administrative expenses associated with the excessive number of government officials were the items weighting more heavily on expenditures. To a very significant extent these problems stemmed from dismemberment; the new Austria - a 6 million inhabitants country - inherited the administrative machinery of the Habsburg monarchy, which was considered overdimmensioned even for a 30 million inhabitants empire. Most agricultural land has been lost, and railways had to be reconstructed and routes redrawn in light of the new economic geography of the Danubean area. These structural problems would actually disturb the new republic for the whole decade[6], and the important point to highlight is that the adjustment to the new realities did not necessarily require a reduction in public expenditure. Two years after the League's intervention, during the fiscal year of 1924, for instance, the share of administrative expenses of total expenditure was reduced from 40.4% in 1922 to 29.6%, though dismissals, which up to December of 1924 reached 71,349 officials, implied an increase in the expenditures with pensions, which rose from 6.1% of total expenditures in 1922 to 13.5% in 1924. The railways' deficit was considerably reduced, reaching only 12.1% of total expenditure in 1924 (it was 21.8% in 1922); most importantly most of it (63.2%) corresponded to investment expenditure in

[6]Cf. E. Marz ( 1948) pp. 301, 630 *passim* and L. Pasvolski (1928) pp. 104-105.

electrification programs[7]. In parallel there has been some significant increases in expenditure for social overhead, which actually made the levels of expenditure before and after the stabilization very similar.

**Table 7-2**
**Hungary: closed accounts budgets, 1920-1925**
**(Millions of gold crowns)**

| | | | | | 1924-25/1st half[b] | | 1924-25[c,b] | |
|---|---|---|---|---|---|---|---|---|
| | 1920-21[a] | 1921-22[a] | 1922-23[b] | 1923-24[a] | estimate | actual | estimate | actual |
| Expenditures | 574.1 | 386.4 | 242.8 | 409.5 | 186.3 | 205.9 | 393.9 | 422.8 |
| Revenues | 192.4. | 226.2 | 170.8 | 192.6 | 143.8 | 208.0 | 293.8 | 453.1 |
| Deficit | 387.5 | 160.2 | 72.0 | 216.9 | 42.5 | -2.1 | 100.1 | -30.3 |
| % Rev./Exp. | 33.5 | 58.5 | 70.4 | 47.0 | 77.2 | 101.0 | 74.6 | 107.2 |

SOURCES and OBSERVATIONS: (a)Fiscal years from July to June, nominal values from L. L. Ecker-Rácz (1933) p. 79) deflated with annual average exchange rates computed from price level indexes from ibid. pp. 61-62. (b)Estimates from League's program reproduced in L. Pasvolski(1928) p. 322.

A similar phenomenon is observed in Hungary, namely the League program marked significant shifts in the direction of expenditures with little, if at all, impact in the level of expenditures. The League's plan for Hungary prescribed budget cuts in several directions in addition to deep reforms in the administration, but from the very beginning the League officials made it very clear that a net increase in expenditure should be expected as the program was implemented. Like in Austria, the League insisted on dismissals - some 10,000 to 15,000 officials in this case - but at the same time the League understood that the salaries of the remaining public officials, which numbered some 160,000, "had so shrunk in value it appeared neither possible nor compatible with the interests of the State to refuse to take steps to increase them"[8]. Furthermore, public employees received special grants as compensation for the elimination of allocations in kind and of rent control. Savings would be obtained with respect to state undertakings and monopolies, especially with respect to the operational deficit of the state railway system. But as observed in Austria, these savings would be mostly offset by increased expenses with pension payments and investment outlays[9].

For both countries, very significant increases in revenues explain the rapid

[7] Cf. League of Nations (1926a) p. 33.
[8] Cf. League of Nations (1926b) p. 98.
[9] *Ibid*. pp. 99, 111.

balancing the budget along with the stabilizations. In Austria state revenues more than doubled in real terms from 1922 to 1923 while the League's program contemplated an increase in revenues of only 33% for the fiscal year of 1923 coming mostly from "realistic" pricing policies for state undertakings and monopolies, and only to a lesser degree from new taxation. Very modest new taxes were introduced, notably one on railway traffic and a turnover tax, while rates of direct taxation, already considered very high by the 1921 report[10], were actually reduced[11]. The actual performance of revenues in the first six months of the reconstruction period was totally unexpected not only for their value but also for their sources. The new tax on railway traffic was a failure and revenues from monopolies were far below target; on the other hand, the yield of direct taxation and of commodity taxes more than doubled the League's original estimates[12]. These taxes reacted very strongly to the stabilization of the currency which, at one stroke, eliminated problems of valuation, underindexation and losses caused by lags in collection, a common phenomenon in countries whose fiscal systems had evolved in an environment of stable prices[13]. Thanks to price stability, and despite the League's measures to reduce direct taxes, they contributed with roughly one fourth of all revenues. The League's plan had estimated their contribution to be 14% and the estimated pre-war value was 18.7%[14]. Table 7-3 shows that for the first six months of the League's intervention revenues were, on average, about 70% of expenditures and in the second semester this was raised to numbers between 82.5% and 98.0% of expenditures, which may be indicative of the size of the Austrian fiscal deficit correcting for the effect of inflation on tax yields, or if we control for the Oliveira-Tanzi effect.

[10] League of Nations (1921) p. 36.
[11] J. V. Van Sickle (1931) p. 195.
[12] League of Nations (1926a) p. 50.
[13] J. V. Van Sickle (1931) pp. 203-204.
[14] *Ibid*. p. 202.

**Table 7-3**
**Austria and Hungary: monthly budgets**
**(for the first reconstruction period)**

| | Austria[b] | | | | Hungary[c] | | | |
|---|---|---|---|---|---|---|---|---|
| month[a] | expend. | revenues | deficit | % | expend. | revenues | deficit | % |
| 1 | 45.4 | 21.1 | 24.3 | 46.5 | 30.5 | 17.9 | -12.6 | 58.7 |
| 2 | 52.0 | 21.7 | 30.3 | 41.7 | 33.8 | 29.5 | -4.3 | 87.3 |
| 3 | 52.0 | 35.9 | 16.1 | 69.0 | 36.7 | 30.9 | -5.8 | 84.2 |
| 4 | 51.1 | 50.1 | 1.0 | 98.0 | 33.7 | 35.6 | 1.9 | 105.6 |
| 5 | 49.2 | 40.6 | 8.6 | 82.5 | 34.0 | 49.2 | 15.2 | 144.7 |
| 6 | 46.8 | 38.6 | 8.2 | 82.5 | 37.2 | 44.9 | 7.7 | 120.7 |
| totals | 296.5[d] | 208.0[d] | 88.5[d] | 70.1[d] | 205.9 | 208.0 | 2.1 | 101.0 |

SOURCES and OBSERVATIONS: (a) For Austria month 1 is January of 1923 and for Hungary is June of 1924. (b) Collected directly from the Monthly Reports of the Commissioner-General, deflated with monthly average exchange rates from J. van Walré de Bordes(1924) pp. 114-139. (c)In gold crowns from J. Parke Young (1925) vol. II, p. 326 and from the provisional budgets collected from the Monthly Reports of the Commissioner General. (d)The values differ slightly from those of Table 7-1 due to different methods for transforming paper crowns into gold crowns.

In the Hungarian plan the League's experts seemed more aware of the importance of the effects of inflation on the real yield of taxation. In their report of December of 1923 they referred to the "proved results of the Austrian experience" and argued that "a substantial part" of the required increase in revenues "may be expected from the automatically better returns (in terms of gold value) from existing taxes (as in the case of Austria) when the stabilization of the currency is effected"[15]. Yet, the League's experts could never expect a full repetition of the Austrian experience, and thus they devised some scope for fresh taxation. A new land tax was introduced, but its contribution to total revenues during the first reconstruction period was only 3.7%, gradually rising to around 10% in the subsequent periods[16]. Increased yields were also expected from the taxes on profits on house property, in view of the modifications in the rent control legislation, but these represented less than 1% of total revenues in the first six months of the program; only in later periods did they reach nearly a 10% share. All other taxes remained unchanged at least during the first six months of the program, after which the idea was to

[15] League of Nations (1926b) pp. 64-66.
[16] *Ibid*. p. 112.

increase the share of direct taxation mostly at the expense of the turnover tax, whose rates were reduced in absolute terms. Indeed direct taxes represented 16.2% of revenues in 1924-25 and increased its share to 21.2% in the next fiscal year while the turnover tax had its contribution reduced from 27.5% to 18.5%. The expected net result of such tax alterations was a slow increase in overall revenues in order to reach the "taxable capacity" of the country, which the League estimated to be 400 million gold crowns, in the seventh semester of the reconstruction plan. Yet as in Austria, revenues were grossly underestimated, especially for the first six months of the program, so that even with the expenditure targets being exceeded by nearly 10%, the budget was balanced in September of 1924, the fourth month of the scheme, as seen in Table 7-3. Again the main contribution to this performance came from taxes that the program left untouched, or reduced, such as the turnover and commodity tax and customs duties[17], and mostly as a result of the Oliveira-Tanzi effect.

In sum, the stabilization programs determined important shifts in the direction of expenditure in both countries - as opposed to significant reductions - which actually represented a significant part of the adjustment of these economies to their new frontiers: the gradual resolution of issues like surplus officials and inefficient railways did not have a significant impact on the levels of expenditure, because dismissals were compensated by pension payments and by badly needed increases in real wages[18], because of the new demands for social overhead and also because railways efficiency required economies but also extensive investment outlays. On the revenues side, a key role would be played by the Oliveira-Tanzi effect, which was recognized in the League's final reports on both programs. According to these reports, both authored by Arthur Salter, the diagnostics of the Brussels Conference of 1920 - the way to currency stabilization was budget balance - should not hold in either case where the currencies were "demoralized" and budgets "in chaos". In the midst of the hyperinflations, it was argued, "the budget deficit mainly as a consequence of the currency instability, incapable of calculation, no such order of events was possible". Furthermore, currency stabilization, i. e. pegging the exchange rate, was

[17] Several imports prohibitions were substituted by tariffs during 1924, which, in addition to a moderate recovery of imports explains part of the recovery of customs revenues.

[18] Even after substantial gains in 1923 middle grade government officials' wages stood at 56% and upper grade official earned no more than 49% of the 1914 values. Cf. International Labor Office (1925) p. 93.

taken as an indispensable pre-requisite to orderly state finances and indeed the reports reached the important conclusion that "budget equilibrium followed, it did not precede"[19].

### 7.3) Poland

Poland had lost its independence a century before in the Congress of Vienna, when she was portioned among the Russian, German and Habsburg empires. In 1919 Poland was reunified, but with frontiers very different from the ones of 1815; the new Poland was by all means an entirely new country. The comparison between the first budgets of the new republic and those following the stabilization, shown in Table 7-4, reveals a striking difference between the evolution of Polish and Austrian and Hungarian fiscal accounts: the Polish levels of expenditure nearly tripled in real terms between 1922 and 1925, passing from 647.4 million zloty in 1922 to 1821.4 million in 1925. This increase expressed the overall growth and development of the Polish public sector, which was being built out of the ruins of the bureaucracy left out by the three portioning empires. It also reflected the pressures generated by the needs of reconstruction: Poland suffered severe devastations in her territory from the war with Soviet Union, which lasted until 1920. Revenues could hardly accompany these tendencies at least until the stabilization in 1924[20] - when they jumped from a yearly level inferior to 400 million zloty to 1371.5 million, thus repeating the phenomenon observed for Austria and Hungary of a spectacular increase of public revenues immediately following the stabilization.

The influence of inflation on state revenues was very clearly observed by contemporaries, most notably by the careful report of British financial expert E. Hilton Young and also by the summit of former ministers of finance, who gathered in mid 1923[21]. The stabilization plan that started in December of 1923 explicitly recognized the Oliveira Tanzi effect, though given that the estimates of the level of revenues under

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[19] League of Nations (1926a) pp.75-76 and (1926b) p. 37.

[20] Except for the first semester of 1922 when the budgetary situation was heavily influenced by the introduction of the extraordinary property tax as part of Michalski's attempt at stabilization lasting until June .

[21] See E. Hilton Young (1924) pp. 23-24; E. Strasburger (1924) and F. Zweig (1944) p. 36.

stable prices were somewhat dismal[22], the plan anticipated the collection of the new capital levy introduced in June of 1923 that was scheduled to be collected during 1924-1926. The latter represented an important contribution to state revenues especially during the first months of the program, as shown in Table 7-5, but yet again the recovery of the yields of existing taxes played the most important role to the observed budgetary improvement[23]. Little was accomplished in the expenditure side; general savings and expenditure cuts were proposed as part of the usual rhetoric of austerity and sacrifices, but the observed increase in public expenditure from 1923 to 1924 goes opposite to the discourse.

**Table 7-4**
**Poland: closed accounts budgets , 1921-1924**
**(Millions of zloty)**

| | 1922 | | 1923 | | 1924 | | 1925 | |
|---|---|---|---|---|---|---|---|---|
| | I | II | I | II | I | II | I | II |
| Revenues | 248 | 144 | 203 | 175 | 540 | 832 | 818 | 800 |
| Expenditure | 322 | 325 | 488 | 473 | 620 | 986 | 926 | 895 |
| Deficit | 85 | 181 | 285 | 298 | 80 | 155 | 108 | 95 |
| % Rev./Exp. | 74 | 44 | 58 | 37 | 87 | 84 | 88 | 89 |
| Property tax[b] | 75 | 10 | - | 2 | 93 | 97 | 35 | 24 |
| Investiment[c] | 59 | 71 | 130 | 184 | 44a | 37a | n.a. | n.a. |
| Coins/notes[d] | - | - | - | - | 76 | 76 | 186 | 115 |
| Debte | 16 | 12 | 34 | 2 | 76 | 16 | 16 | 15 |

SOURCES and OBSERVATIONS: (a) From the preliminary accounts. (b)For 1922 consists of the Extraordinary Property Tax enacted by Michalski and for the later periods consists of Grabski's Capital Levy. (c) Refers mostly to state railways. (d)Includes small notes and subsidiary coins. (e)Includes internal and external debt. From Republic of Poland (1926) pp.173-176 and (1931) p. 80-83.

The remarkable fact about the role of Polish finances in the process of stabilization is that despite the very significant improvement, the budget was not balanced as a consequence of the stabilization program. It is true that as part of the alleged "regime change" observed by Thomas Sargent the government was separated from the central bank, yet it is surprisingly neglected that the government retained

[22] E. H. Young (1924) p. 30.
[23] E. Rose (1924) p. 11.

considerable powers to print money, though only small notes and coins[24]. The government effectively exercised these powers significantly in 1924 and 1925. During those years the total issuing of money by the Treasury reached approximately 450 million zloty, as shown in Table 7-4, which represented more than twice the existing money supply at the onset of the stabilization. Therefore, the fiscal "reforms" did not imply the establishment of a fiscal regime characterized by balanced budgets, but determined instead the start of an expansionary fiscal policy characterized by deficits ranging from 15% to 10% of expenditures financed mostly by money creation during 1924 and 1925, as shown in Table 7-4 .

**Table 7-5**
**Poland: monthly budgets, December of 1923 to May 1924**
**(Millions of zloty)**

| | | Property tax | All other revenues | Total revenues | Invest expendit[a] | total expendit | %Exp/ revs |
|---|---|---|---|---|---|---|---|
| 1923- | Decembera | 1.6 | 30.5 | 32.1 | 42.1 | 96.0 | 33.4 |
| 1924- | January | 1.8 | 32.8 | 35.6 | 6.9 | 70.3 | 50.6 |
| | February | 28.0 | 48.0 | 76.0 | 0.1 | 85.5 | 88.8 |
| | March | 36.7 | 70.5 | 107.2 | 3.8 | 109.1 | 98.3 |
| | April | 18.0 | 103.2 | 121.2 | 9.5 | 107.3 | 112.9 |
| | May | 4.3 | 94.7 | 99.0 | 9.1 | 105.5 | 93.8 |
| | June | 3.8 | 97.1 | 100.9 | 15.1 | 142.7 | 70.7 |

SOURCE and OBSERVATIONS (a) Preliminary figures from Republic of Poland (1926) pp.173-176. The totals reported for investment expenditure are not reported in the later closed accounts from which the totals for expenditure were taken. (b) Grabski's capital levy. From Republic of Poland (1931) pp. 80-83.

It is interesting to observe that the increases in debt and in the issue of money by the Treasury during 1924 and 1925 entered the Polish budgetary accounts as "extraordinary revenues", an accounting trick which was noted by several historians of the episode[25], but confused a number of other authors. John Parke Young, for example, in his account of the Polish stabilization, failed to note this detail and reckoned a budgetary

[24] The Treasury was authorized to issue coins up to 150 million zloty for the fiscal year of 1924, representing nearly half of the existing money supply, and for 1925 this total was doubled, G. Zdziechowski (1925) pp. 45-46.
[25] For example P. Robin (1932) p. 35. See also M. A. Heilperin (1931) pp. 135-136; F. Zweig (1944) p. 40

surplus for 1924 of 74 million zloty, merely reproducing the Polish preliminary accounts[26]. Ragnar Nurske, in his classic study of post-war inflations, also seems to assume budget balance in 1924[27], and more recently Thomas Sargent, drawing exactly on Parke Young and Nurske for his account of the Polish stabilization, also assumed that the government budget was balanced in 1924 as a consequence of the financial reforms[28].

The failure to take account of the true fiscal situation of Poland during 1924 and 1925 seriously undermines these authors' views on the Polish stabilization, especially Nurske's and Sargent's, who centered their explanations for the stabilization on the alleged move to a balanced budget[i]. Thomas Sargent's idea that the newly established fiscal and monetary policies' strategies had provided backing for the currency in the form of the present value of the stream of government surpluses is contradicted by the presence of budget deficits in 1924 and 1925 largely financed by printed "unbacked" money, and no apparent intention to depart from such a "regime".

In August of 1925, after a year and a half of stable prices, the zloty was allowed to float and was then stabilized again at a lower level. The London financial press attributed the devaluation to the "coin inflation"[29], but in general it was widely accepted that the collapse was determined by a number of adverse circumstances including harvest failures, weak terms of trade, a tariff war with Germany, the dismal results of the Dillon & Reed loan and the deterioration in competitiveness determined by the wage inflation observed after the stabilization. Nurske himself denied the influence of fiscal policy on the episode: "yet, having regard to the fact that the principal cause of the disequilibrium - namely the harvest failure of 1924 - was a temporary one, it is plausible to argue ... that exchange stability could have been maintained if Poland had possessed a monetary reserve adequate to bridge a transitory gap of this sort"[30]. Sargent's explanation for the 1925 episode does not involve these issues: referring to the second part of the League of

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and Z. Landau & J. Tomaszewski (1984) pp. 278-279.

[26] J. P. Young (1925) vol. II, pp. 182-184. The source of Young's figures was the Polish Statistical Annuary of 1923, published in 1924 , so that it could not bring but budget estimates .

[27] League of Nations (1946) p. 26.

[28] T. Sargent (1982) pp. 71-72 even reproduces a table with budgetary data from J. Parke Young (1925) vol. II, p. 65, though without mentioning that the figures for 1924 and 1925 correspond to the budget proposed by the government (not even the budget effectively passed in the case of 1925), thus very different from the closed accounts budgets shown in Table 7-4.

[29] F. Mlynarski (1926) pp. 3-4.

[30] League of Nations (1946) p. 26.

Nations report on post-war inflations - the part not authored by Nurske - he argued that the collapse had been due to the "premature relaxation of exchange controls"[31], though the existence of the latter is not mentioned anywhere in the literature[32]. In addition, Sargent mentioned "the tendency of the central bank to make private loans at insufficient interest rates"[33], but in the League's report there is no mention of that. The report only argued that there had been no credit contraction corresponding to the reserves losses after April of 1925, as prescribed by the so called "rules of the game". It says nothing about credit at subsidized rates, and again no mention of that could be found elsewhere. In sum, Nurkse's and Sargent's explanations of the Polish stabilization are essentially at odds with the fact that Polish stabilization was achieved by a program whose fiscal policy was clearly "unsound".

7.4) <u>Germany</u>

The "emergency" fiscal decrees of October 11th and December 7th and 19th - which corresponded to the "reforms" to which the German stabilization has been usually attributed - were attempts to place the existing tax system "on a gold basis" and did not introduce any new taxes[34]. It turns out that these emergency decrees were implemented simultaneously with the stabilization, and quite obviously indexation provisions are immaterial under stable prices. Besides, tax indexation is technically difficult, therefore the effectiveness of attempts in this direction could certainly not be taken for granted ex-ante. In any event, the important point is that the astonishing growth in tax revenues after the stabilization observed in Table 7.6 was generated by the existing taxes[35] or by the "indexation" of the existing tax system provided by price stability[36]. Table 7-6 shows figures for revenues and expenditures on a monthly and on a ten days basis deflated with

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[31] T. Sargent (1982) p. 73.

[32] The League's report mentioning of "foreign trade controls" appear to relate to what in the modern jargon would be termed commercial policy, which is consistent with all accounts of the 1925 episode. Cf. League of Nations (1946) p. 108.

[33] Ibid. p. 73.

[34] Republic of Germany (1924) pp. 74-98; J. M. Robert(1926) pp. 137-144 and C. Bresciani-Turroni (1937) pp. 67-74).

[35] C. Bresciani-Turroni (1937) p. 357.

[36] Republic of Germany (1924) p. 32.

exchange rates[37]. The recovery of tax revenues after the stabilization was absolutely extraordinary: from the beginning of November, when taxes financed less than 1% of expenditure, the budget was balanced in 40 days! It is even more remarkable when we remember that no new taxation was introduced in the process and that this was mostly the result of the influence of price stability on taxes.

In the German case we observe quite the same picture of Austria and Hungary, namely the levels of expenditure before and after the stabilization were very similar, the improvement to the budgetary situation being almost entirely due to increased tax revenues. Thus the "reforms" observed in Germany had the same character of the ones that have been implemented by the League in Austria and Hungary, namely they were predominantly changes in the composition of government expenditure with little effect on the level of expenditures. In this respect it is remarkable that in 1922/1923, for example, payments on account of the Treaty of Versailles represented 38% of total expenditure while for 1924/25 only 13% of total spending was budgeted to this purpose, due to the revision of the London Schedule of reparations payments accomplished by the Dawes Plan[38]. The service (and also the real value of the stock) of the domestic public debt was another item that had its share over total expenditures significantly changed, especially during the two years preceding the period covered by Table 7-7. During 1919 and 1920, when prices grew by approximately 900%, the real value of the stock of the public debt fell from 58,515 million gold marks to 5,424 million: while the former figure represented more than seven times public expenditures in 1919-20, the latter was equivalent to no more than 80% of public expenditures for 1921-22[39]. For the fiscal year of 1921-22 the service of this debt was estimated at 9.8% of total expenditure, but the real value of the payments effectively made reached only 7%[40]. For 1923-24, these payments represented approximately 3% of total expenditures[41].

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[37] Ibid. pp. 32, 77.
[38] Ibid. pp. 29-32.
[39] Ibid. p. 32 and Statistisches Reichsamt (1923) p. 42.
[40] Republic of Germany (1924) p. 77.

**Table 7-6**
**Germany: revenues and expenditures**
**(May of 1923 to October of 1924 in millions of gold marks)**

| Period | | | Expenditures | Revenues | Rev.%/Exp. |
|---|---|---|---|---|---|
| 1923- | May | | 284.7 | 123.3 | 43.3 |
| | June | | 496.4 | 48.2 | 9.7 |
| | July | | 473.9 | 48.3 | 10.2 |
| | August | 1--10 | 111.0 | 3.2 | 2.9 |
| | | 10--20 | 281.1 | 4.9 | 1.8 |
| | | 20--31 | 491.5 | 3.6 | 0.7 |
| | | Total | 883.6 | 11.7 | 1.3 |
| | September | 1--10 | 67.1 | 2.6 | 3.8 |
| | | 10--20 | 168.7 | 2.6 | 1.5 |
| | | 20--30 | 453.4 | 9.2 | 0.2 |
| | | Total | 689.2 | 14.4 | 2.1 |
| | October | 1--10 | 49.0 | 0.4 | 0.9 |
| | | 10--20 | 108.8 | 0.8 | 0.8 |
| | | 20--31 | 78.0 | 0.03 | 0.1 |
| | | Total | 235.8 | 1.23 | 0.5 |
| | November | 1--10 | 134.2 | 0.1 | 0.1 |
| | | 10--20 | 28.5 | 0.4 | 1.5 |
| | | 20--30 | 258.7 | 10.6 | 4.1 |
| | | Total | 421.4 | 11.1 | 2.6 |
| | December | 1--10 | 179.9 | 32.8 | 18.2 |
| | | 10--20 | 165.7 | 42.9 | 25.9 |
| | | 20--31 | 153.8 | 88.8 | 57.8 |
| | | Total | 499.4 | 164.5 | 32.9 |
| 1924- | January | 1--10 | 63.9 | 98.4 | 154.0 |
| | | 10--20 | 180.4 | 153.6 | 85.1 |
| | | 20--31 | 199.1 | 185.9 | 93.3 |
| | | Total | 443.4 | 437.9 | 99.0 |
| | February | | 478.6 | 339.8 | 71.0 |
| | March | | 485.6 | 526.8 | 108.4 |
| | April | | 472.1 | 396.4 | 83.9 |
| | May | | 511.0 | 449.5 | 88.0 |
| | June | | 440.9 | 382.3 | 86.7 |
| | July | | 452.0 | 494.8 | 109.7 |
| | August | | 489.4 | 482.7 | 98.7 |
| | September | | 495.7 | 522.3 | 105.4 |
| | October | | 620.0 | 613.7 | 99.0 |

SOURCES: Original paper mark figures on a 10 days basis from J. W. F. Thelwell (1924) p. 28 and 1925, p. 33, deflated with weekly exchange rates against sterling from The Economist, various issues(1923).

[41] S. Andic & J. Veverka (1964) p. 237.

Another important development was the increase in expenditure for broadly defined social purposes - a natural development within the framework of the Weimar state - that actually maintained a strong upward tendency throughout the 1920s[42]. It has often been observed that a decree of October 27th, 1923 established that approximately 25% of all public employees would be dismissed, 10% by January of 1924[43]. But as in Austria and Hungary, it has been less often emphasized that the wages of the remaining officials were increased by 50% to 90% in real terms after the stabilization, very much like what happened to the real wages of other categories of workers[44], so that the net result of these measures on the public service's wage bill might not have been significant.

**Table 7-7**
**Germany: revenues and expenditures, 1921-1925**
**(Millions of gold marks)**

| yeard | 1921/22a | 1922/23a | 1923/24a,b | 1924/25c |
|---|---|---|---|---|
| expenditure | 6651.3 | 3950.6 | 5768.0 | 6895.0 |
| revenues | 2927.4 | 1488.1 | 1802.5 | 7786.2 |
| deficit | 3723.9 | 2462.5 | 3965.5 | -391.2 |
| % rev./exp. | 44.0 | 37.7 | 31.2 | 112.9 |

SOURCES and OBSERVATIONS: (a)The values for 1921/22, 1922/23 and for the period March-July of 1923 correspond to the figures reported in Republic of Germany (1924) p.32. (b)The figures for August-December of 1923 are from Table 6. For January-March of 1924 the figures are also from J. W. F. Thelwell (1924) p. 33 and (1925) p. 30. (d)For fiscal years starting in March.

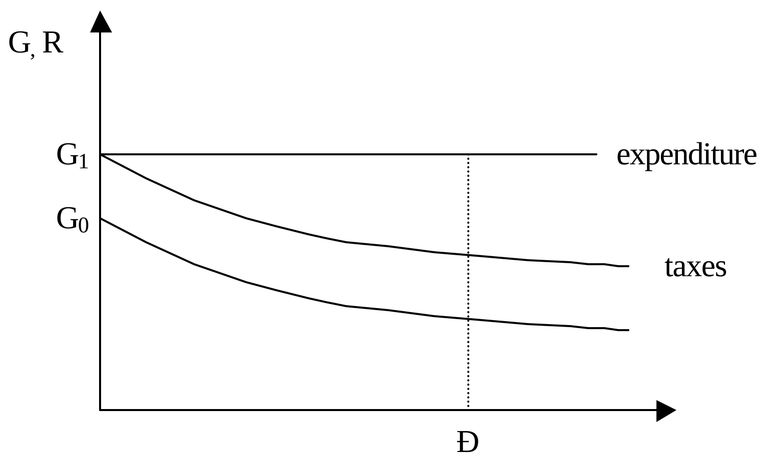
In sum, it seems clear that the deficit was eliminated mostly by the effect of price stability on tax revenues; "drastic" fiscal reforms seemed to have played a minor role, if at all, in the episode. Whatever minimal overall fiscal restraint, real or rhetorical, would serve no purpose other than speeding the strict balancing of the budget, which might have been very useful for the negotiations towards foreign financial support by reassuring the government's adherence to orthodox finance. In light of this, the often celebrated episode

[42] S. Andic & J. Veverka (1964) p.237
[43] Republic of Germany (1924) p. 78.
[44] In general the real wages of all categories recovered very quickly from the trough they reached at the end of the inflation regaining their pre-war levels late in 1924, G. Bry (1960, p. 62) and International Labor Office (1925) pp 16-17. As regards government officials specifically estimates for their levels of real wages, as a percentage of 1914, in October of 1923 are 44% (skilled) and 61% (unskilled). In June 1924 these levels would be 87% and 99% respectively.

of the Rentenbank refusing to extend credit to the government beyond the pre-established limits loses much of its meaning, appearing as a hardly justifiable showing of inflexibility staged to impress foreign markets. It would be hard to conceive an inflow of capital such as what was triggered by the Dawes loan, without all the more decisive proclamations of support to the principles of "sound" finance.

7.5) The meaning of fiscal reforms

One important lesson of the experiences described in the previous sections is that the presence of large budget deficits in countries experiencing high inflations says little about the fundamental fiscal position of these countries, or about inflation-corrected deficits. This is easily seen in Graph 7-1 below showing the evolution of seigniorage, taxes, "total revenues" and alternative levels of expenditure for different levels of inflation:




**Graph 7-1: Budget deficits and inflation**

The graph pictures taxes as monotonically decreasing with inflation, and total revenues as the sum of taxes and seigniorage. As observed in Chapter 4 the "total revenues" curve reaches a maximum at a level of inflation lower than the one that maximizes seigniorage[45]. The important point to observe is that independently of the value of the budget deficit at zero inflation, which should correspond to the "fundamental" fiscal position, for all three levels of expenditure one would observe very large fiscal deficits under high inflation; the mere observation of large budget deficits in these conditions does not provide in itself any indication on whether the economy is at "sound" positions like at A, or "unsound" ones like at E and I. Therefore, when taxes are adversely affected by inflation, the need for fiscal restraint or tax "reform" as part of a stabilization effort should be established by some measure of the zero-inflation-budget, or the "inflation-corrected" deficit. The previous sections have actually argued that the latter were very small, at least for Germany, Austria and Hungary; this is certainly not a general feature of all high inflation episodes, though the adverse influence of inflation over taxes is very commonly observed.

Yet another method of checking the importance of the Oliveira-Tanzi effect is to estimate equations relating taxes and inflation. The available tax figures are subject to limitations, but the indications are indeed valuable. Table 7-8 shows regressions of taxes on inflation based on an exponential specification, i. e. $T(\Pi) = \tau_0.\exp(-\tau_1)$:

**Table 7-8**
**Regression of the Real Value of Tax Revenues on Inflation1**
**(t statistics in parentheses)**

| country | log $\hat{o}_0$ | $\hat{o}_1$ | $R^2$ | DW |
|---|---|---|---|---|
| Germany[2] | 5.97 | -1.08 | 0.69 | 1.40 |
| | (76.5) | (-8.63) | | |
| Austria[3] | 1.33 | -1.10 | 0.60 | 0.98 |
| | (34.6) | (-2.01) | | |

SOURCES and OBSERVATIONS: (1) For sources of price data see Table 5-1. (2) Revenues in millions of gold marks from Republic of Germany (1924) p. 34. The period considered was January of 1921 to July 1923. (3) Revenues including only direct taxes, as estimated by J. V. Van Sickle (1931) p. 203. The period considered was January of 1921 to December of 1922.

The regressions reported in Table 7-8 show a significant negative association

45 considering the classic steady state result that ...

between the real value of tax revenues and inflation for Germany and Austria. An interesting finding of Table 7-8 is that the values for †0 , which represent proxies for the zero-inflation level of tax revenues, seem to indicate that the predicted zero-inflation level of revenues are very close to the values actually observed immediately after the stabilizations. The predictions of Table 7-8 are of about 391 million gold marks for Germany and about US$ 600 thousand for Austria (for direct taxes only). The actual values for Germany were 314 million gold marks - average for the first three months of the stabilization (December, 1923 - February, 1924) and 389 million gold marks during the first two months of 1924. For Austria, the average monthly yield from direct taxes in 1923 was about US$ 860 thousand which is nearly 40% greater than the predicted value. This underprediction, for what it is worth, might be taken as indication of the existence of fiscal "reforms", but given the presence of serial correlation in the equation and the fact that, as reported in section 7.2, the rates for direct taxes were reduced, this underprediction should be seen with caution.

## 7.6) Summary and conclusions

The war and the economic, social and political events that followed determined a sizeable and permanent increase in government expenditures as a percentage of GNP in most European countries[46], reflecting a trend towards an increased state participation in economic affairs, either in terms of direct spending, or an overall dirigisme, for military or for social motivations. The provision of "permanent" sources of revenues to accommodate this "structural change" certainly presented a major fiscal problem, but one that seemed to be solved at the end of the hyperinflations. The fiscal "reforms" introduced at this moment reflected an important change of priorities regarding public expenditures: the reforms comprised mostly shifts in the direction of expenditure with little impact, if at all, on the net budgetary result. The dismantling of the overstaffed bureaucracies of the former empires, the fact that domestic public debts were destroyed by inflation and the

[46] In Germany it rose from 14.8% in 1913 to 25.0% in 1925 and in the UK from 12.8% in 1910 to 26.1% in 1920. Cf. C. Maier( 1984) p. 108.

external debt - in the German case - was drastically reduced by the Dawes Plan, did not represent a meaningful reduction in public expenditure due to many new influences acting on the contrary direction. The marked increases in government expenditure for social purposes, and the recomposition of wages of public employees, more than made up for the savings often quoted as indications of strict austerity oriented fiscal policies.

The recovery of the real yield of taxation after the stabilization through the Oliveira-Tanzi effect was the key to budget balance in all four cases examined. This means basically that budget deficits were to an overwhelming extent products of inflation, or that, to use today's terminology, "inflation corrected deficits" were balanced or at least manageable. "True" tax reforms had taken place at some point before the stabilizations, most likely during previous stabilization attempts such as Erzberger's in 1921 Germany, Hegedüs in 1921 Hungary and Michalski's in 1922 Poland. All these programs were specifically designed to address the fiscal issue, but the fact that they failed to arrest inflation does not imply that they failed in their purposes, it suggests instead that fiscal balance was not a sufficient condition for stabilization at a moment when other fundamental causes of inflation were still in full work. The essential point to retain is that the end of the hyperinflations involved many elements: the coordination device provided by dollarization, and the resolution of issues related to "fundamentals": a substantial improvement in the external position - which might be the revision of the reparations schedule, a territorial change (as the annexation of the coal exporting Upper Silesia region to Poland) or the reopening of international capital markets - and certainly budget balance. None of these was sufficient by itself; the stabilizations succeeded only when these pieces fit together.