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Fiscal "reforms" and the ends of four hyperinflations

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1. Introduction

Most accounts of the end of the European hyperinflations of the 1920s attributed a key role to "fiscal reforms" implemented more or less simultaneously with the stabilizations[1]. Yet there has been little effort in detailing the nature and contents of these reforms. It is indeed observed that budgets were balanced very quickly after the stabilizations, but this fact in itself does not actually assure the presence of reforms of any sort. It has been noted recently that the analysis of budget deficits in a high inflation environment involve a number of problems related to the distinction between "nominal" and "operational" or "inflation adjusted" deficits?[2] The basic point is that inflation affects budget deficits in many respects and this should be considered in assessing the *ex-ante* need for fiscal austerity as part of a stabilization effort. By the same token, the influence of price stability on deficits might very well be an important part of the explanation for the sudden budgetary improvements observed at the end of the European hyperinflations treated by Thomas Sargent.

There are at least two important channels through which inflation might generate deficits: on the expenditure side, it is noted that some payments are created by the existence of inflation, and should be excluded from the "operational" deficit. A common example are the payments on account of indexation of the public debt, which are designed to protect the outstanding stock from inflation[3]. With the stabilization these payments would simply vanish; reductions in expenditure would then be observed even in the absence of any deliberate austerity effort. Yet, as it will be shown below, in all four hyperinflations studied by Thomas Sargent reductions in expenditure, if at all, played a minor role in balancing the budget; the main contribution was due to the improvement in tax collection. This leads us to the second channel through which budgets might have been affected by inflation, which is related to the latter's influence on real tax revenues. It has been often noted as regards Latin

[1] Perhaps the strongest version of this argument is the one recently proposed by T. Sargent "The End of Four Big Inflations" in R. Hall (ed.), "*Inflation: Causes and Effects*" (Chicago, 1982). Less dogmatic views which also assign utmost importance to the budget can be found in C. Bresciani-Turroni "*The Economics of Inflation, a study in Currency Depreciation in Post-War Germany*" (Augustus M. Kelley Reprint, London, 1968), League of Nations "*The Course and Control of Inflation, a Review of the Monetary Experience of Europe After World War I*" (Geneva, 1946). C. L. Holtfferich "Germany and Other European Countries in the 1920s", in J. Williamson (ed.) "*Inflation and Indexation: Argentina, Brazil and Israel* (Washington, 1985). Z. Landau/J. Tomaszewski, "Poland Between Inflation and Stabilization, 1924-1927", in O. Feldman (ed.) "*The Experience of Inflation, International and Comparative Studies*" (Berlin, l984). E. Rose "*The Progress of Financial Reconstruction in Poland*", (Warsaw, 1924), T. Mincer "*Le Zloty Polanais, La Réforme Monétaire en Pologne et ses Suites*" (Paris, 1927), M. A. Heilperin, "*Le Probleme Monétaire D'Aprés Guerre et sa Solution en Pologne, en Austriche et en Tchécoslovaquie*" (Paris, 1931), P. Frank "*La Reconstitution Financiére de la Austriche*" (Paris, 1924), M. Mitzakis "*Le Relèvement Financier de la Honorie et la Sociétè des Nations*" (Paris, 1925). L. Ecker-Récz "*The Financial Reconstruction of Hungary*" (Unpublished thesis, Cambridge, 1933) and L. Pasvolski, "*Economic Nationalism in the Danubean States*" (New York, 1928).

[2] This has been a key issue in the negotiations between the IMF and some of the indebted high inflation Latin American countries, see for example E. L. Bacha "The IMF and the Prospects for Adjustment in Brazil", in J. Williamson (ed.) "*Prospects for Adjustment in Argentina, Brazil and Mexico*" (Washington, 1983). See also W. H. Buiter "Measurement of the Public Deficit and its Implications for Policy Evaluation and Design", *IMF Staff Papers*, 30 (September, 1983).

[3] The "real" deficit is commonly defined as the real change in the government total indebtedness, cf. Buiter, "Measurement of the Public Deficit".

American countries, for example, that taxes were negatively affected by inflation[4]; and it has been observed that this phenomena tums out to be particularly relevant for the hyperinflations[5]. In the presence of this "effect" the sudden stabilization would bring a very quick and very strong recovery of tax revenues, which very clearly has nothing to do with any kind of "reform". The relevance of these "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.

If the deficits were only "nominal", i.e., entirely produced by inflation – which is compatible with the balancing of budgets immediately after the stabilizations – it would be difficult to sustain, as it is quite common, that uncontrolled budget deficits were the determinant factor for the hyperinflations. In this case we would be not only challenging the usual explanation for the hyperinflations, which is centred on the fiscal difficulties associated with reconstruction[6], but also Sargent's explanation for the stabilization. If it is true that, to some significant extent, budget deficits were caused by inflation we would have a powerful motivation to seek the driving forces of the hyperinflation outside the financial sphere, possibly in the balance of payments; but this is something far beyond the scope of this paper.

The suddenness with which the stabilization was accomplished allows an extraordinary comparison, nearly a comparative statics exercise, involving the fiscal system under hyperinflation conditions and under stable prices. For the same four countries examined by Thomas Sargent, we sought to examine in detail the measures implemented during the stabilization in order to assess precisely how much of the astonishing improvement in the budgetary conditions was due to tax "reform", to expenditure cuts and how much was produced by the effect of price stability over tax revenues. The next sections perform this "test" for Austria, Hungary, Poland and Germany

[4] The classic case is Argentina, and the most usual references are V. Tanzi, "Inflation, Reel Tax Revenue, and the case for Inflationary Finance: Theory with an Application to Argentina", *IMF Staff Papers*, 25 (September,1978), "Inflation, Lags in Collection, and the Real Value of Tax Revenue", *IMF Staff Papers*, 24 (March, 1977) and J. H. O. Oliveira "Money, Prices and Fiscal Lags: A Note on the Dynamics of Inflation" *Banca Nazionale del Lavoro Quarterly Review*, 82 (September, 1967).

[5] This has been observed by a number of authors. See, for example, C. Bresciani-Turroni, "The Economics of Inflation", pp. 66-67, F. D. Graham "*Exchange, Prices and Production in Hyperinflation: Germany, 1920-23*" (New York, 1930), pp. 37-45 and P. C. Witt "Tax Policies, Tax Assessment and Inflation: Towards a Sociology of Public Finance in the German Inflation 1914-1923", in N. Schmukler/E. Markus (eds.) "*Inflation Through the Ages: Economic, Social, Psychological and Historical Aspects*" (New York, 1983) for Germany; Z. Landau/J. Tomaszewski, "*The Polish Economy in the Twenty Century*" (London, 1985) pp. 43-44 for Poland; L. L. Ecker-Rácz, "The Financial Reconstruction of Hungary", pp. 110 for Hungary and E. März, "*The Austrian Economy in Transition: Heritage and Formative Years of the Austrian Republic*", (Unpublished thesis, Cambridge, 1948), pp. 501-503 for Austria.

[6] This "monetarist" point of view on the episode is actually one of the "schools of thought" on the hyperinflation, cf. C. P. Kindleberger, "*A Financial History of Western Europe*" (London, 1984), ch. 17. It can be mostly associated with the works of C. Bresciani-Turroni, "The Economics of Inflation", and R. Nurske, League of Nations, "The Course and Control of Inflation"; it has become the established view in recent years in view of the publication of Phillip Cagan's essay "The Monetary Dynamics of Hyperinflation" in M. Friedman (ed.) "*Studies in the Quantity Theory of honey*" (Chicago, 1956).

respectively; the last section recollects the main findings and comments briefly on the fiscal difficulties observed more generally during the early 1920s.

2. Austria and Hungary

It is difficult to evaluate the Austrian fiscal situation during the inflation period as there is very little scope for comparisons with pre-war and more Importantly with pre-inflation values. The first full year budget of the new Austrian Republic was drafted for the fiscal year of 1919-1920, a period in which the exchange rate depreciated by 437% and the inflation rate was of 106%. The next budget – for 1920-1921 – covered a period within which inflation was of 95.5% and exchange depreciation reached 397%.

Table 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 "*Direct Taxation in Austria*" (Cambridge,1931) pp. 66 and 72. (b) League of Nations estimate for October of 1922 annualized, from League of Nations "*Financial Reconstruction of Austria. General Survey and Principal Documents*" (Geneva,1926) 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 "*The Austrian Crown, its Depreciation and Stabilization*" (London. 1924) pp. 114-139.

Table l reports the closed accounts results for these first two fiscal years together with the estimates for the fiscal situation up to the League's intervention and the actual results for 1923 and 1924. The table invites a comparison of the values for the first two budgets with the post stabilization values. Though it should be warned that the values for 1919 and 1920 have been deflated with the help of annual averages of exchange rates, which might have produced distortions, the result that the levels of expenditure are roughly similar for the whole period appear to be sound. Its composition, however, is markedly different. For the first two budgets, for example, food subsidies, which were abolished at the end of 1921, responded for nearly 30% of the deficits[7], the other items weighting more heavily on expenditures being the operational deficit of state undertakings, especially railways,

[7] J. V. Yan Sickle, "Direct Taxation in Austria", p. 74.

and administrative expenses associated with the excessive number of government officials[8]. According to League's evaluation in October of 1922 these latter two items represented respectively 21.8% and 40.4% of the total of 672.5 million gold crowns of public expenditure in 1922[9]. Two years after the League's intervention, during the fiscal year of 1924, for instance, total expenditure stood at 632.4 million gold crowns and administrative expenses accounted for only 29.6%, though dismissals, which up to December of 1924 reached 71.349 officials, had implied an increase in the expenditure with pensions, which rose from 6.1% of total expenditure in 1922 to 13.5% in 1924. The railways deficit was considerably reduced, reaching only 12.1% of total expenditure in 1924, and most importantly most of it, i.e., 63.2%, corresponded to investment expenditure in electrification programs.

To judge from the above there was an important shift in the direction of expenditure, which actually represented a significant part of the adjustment of the Austrian economy to the dismemberment of the Habsburg monarchy. To a great extent problem as food subsidies, surplus officials and inefficient railways stemmed from dismemberment; these would actually reflect structural problems that would disturb the new republic for the whole decade[10]. For our purposes it is important to observe that the gradual resolution of these issues, except for the elimination of food subsidies would not exert a powerful impact on the levels of expenditure as, on one hand, dismissals were compensated by pensions and by badly needed increases in wages[11], and on the other, railways efficiency required economies but also extensive investment outlays. Indeed, as long as the levels of expenditure are concerned, in 1923 the League officials could not compress expenditures more than 12% with respect to 1922, and thanks to the fact they suspended nearly all releases of funds for investment purposes.

A striking difference between the periods before and after the stabilization is related to state revenues, which more than doubled in real terms from 1922 to 1923. One is tempted to attribute this to the League's program and Its apparent emphasis on fiscal austerity. The League's program contemplated an increase in revenues of about 33% for the fiscal year of 1923 which would come mostly from "realistic" pricing policies for state undertakings and monopolies and only to a lesser degree from fresh taxation. The League appeared not to be willing to rely very much on taxation at least during the first stages of the program. Only moderate new taxes were introduced, notably a tax on railway traffic and a turnover tax, while rates on direct taxation, already considered very high by

[8] The new Austria inherited the administrative machinery of the Habsburg monarchy, which was considered over dimensioned for a 30 million inhabitants' empire, cf. L. Pasvolski, "Economic Nationalism in the Danubean States", pp. 104-105.

[9] League of Nations, "Financial Reconstruction of Austria", p. 33.

[10] E. März, "The Austrian Economy in Transition", pp. 301, 630 *passim*.

[11] Even after substantial gains in 1923 middle grade government officials' wages stood at 5651 and upper grade official earned no more than 49% of the 1914 values, cf. International Labor Office "*Workers' Standard of Living in Countries with Depreciated Currency*" (Geneva, 925), p. 93.

the 1921 report[12], were actually *reduced*[13]. The actual performance of revenues in the first half year of the reconstruction period was totally unexpected not only for its value but also for its source. The new tax on railway traffic was a failure and revenues from monopolies have been far below targets; on the other hand, the yield of direct taxation and of commodity taxes more than doubled the Leagues original estimates[14]. These taxes reacted very strongly to the stabilization of the currency which, at one stroke, eliminated problems of valuation and losses caused by lags in tax collection, a common phenomenon in countries whose fiscal systems had evolved in an environment of stable prices. According to a detailed study of Austrian direct taxation the yield of these taxes for the period of January to October of 1921, during which the inflation rate was of 156%, was of 31.5 million gold crowns, reaching 11.1 million in the same period of 1922, when the inflation rate was of 1605%. Meanwhile, for the first six months of 1923, even with minor reductions in rates, direct taxes' yield was of 51.4 million gold crowns[15]. Thanks to the currency stabilization, and despite the League's measures to reduce direct taxes, they contributed with roughly one fourth of all revenues while the Leagues plan had estimated it on 14% and the estimated pre-war value was of 18.7%[16]. This result was an extraordinary demonstration of the effects of inflation over the real yield of taxation, which may otherwise be observed in Table 2.

Table 2 shows that for the first six months of the League intervention revenues accounted for around 70% of expenditures, which actually represented an average of periods in which tax revenues had not yet been fully adapted to price stability and periods in which they did. To judge from what Table 2 shows for the second half of the semester the budgetary position would be significantly better, with taxes financing between 82.5% and 98.0% of expenditures. Indeed, Table 1 reports that 92% of total spending was financed out of taxes during the second semester of the plan, which seems in line with the values for the latest months of the first semester, and it is possibly indicative of the size of the Austrian fiscal deficits independent of the effect of inflation over tax yields. It seems clear though that there was no huge "structural deficit" to be dealt with at this point. During this period the expenditure targets were exceeded as, on one hand, the League had to agree on releasing funds for investment expenditure on railways[17], and on the other, the Austrian government was reluctant with

[12] League of Nations, "*Financia1 Reconstruction of Austria-Report of the Financial Committee of the Council (and relevant documents)*" (Geneva, 1921), p. 36.

[13] J. V. Van Sickle, "Direct Taxation in Austria", p. 195.

[14] League of Nations, "Financial Reconstruction of Austria", p. 50.

[15] Yan Sickle obtained monthly estimates of the yield of direct taxes for the periods of January to October of 1921 and 1922. The values obtained showed a clear negative relation with inflation rates, as shown by the following regression:

Log of direct tax (real) revenues = 1.33 -1.10 inflation $R^2 = 0.60$, DW = 0.98

(34.6) (-2.10)

Tax revenues' figures from J. Y. Yan Sickle, "Direct Taxation in Austria", pp. 203-204 and inflation rates computed from J. Van Walré de Bordes, 'The Austrian Crown", p. 83.

[16] *Ibid*., p. 202.

[17] Which amounted to 52.8 million gold crowns entirely spent on the second semester of 1923. League of Nations, "Financial Reconstruction of Austria", p. 72.

respect to further dismissals of officials at this point[18]. Revenues were once again better than targets, representing an increase of around 32% with respect to actual values for the first semester, and this time revenues from monopolies and increases in taxation contributed much more significantly[19]. These tendencies would be further strengthened in 1924 as the program pushed taxation even further in order to obtain a strict balancing of the budget, despite the Austrian governments pressures for the release of resources for investment purposes and the depressed economic conditions.

Table 2

Austria and Hungary: Monthly Budgets (for the first reconstruction period)

	Austria[b]				Hungary[c]			
Month[a]	Expend.	Reven.	Deficit	%	Expend.	Reven.	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, "The Austrian Crown", pp. 114-139. (c) In gold crowns from J. Parke Young "*European Currency and Finance*" (Washington, 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 1 due to different methods for transforming paper crowns into gold crowns.

The Hungarian fiscal situation before and during the first phases of the period under the Leagues control is shown in Table 3. Again, it should be warned that the transformation of the nominal values into gold crowns Involved an inevitably arbitrary choice of price index, which might conduct to distortions. To judge from the League's evaluation of the Hungarian budgetary position, especially as regards 1923-24, the estimates appear accurate. The League's program had established levels of

[18] Dismissals summed to 44.870 from October of 1922 to June of 1923, but only 23.460 between July of 1923 to July of 1924. The Commissioner-General complained about this very often in his reports. As observed in the League's final account of the Austrian program, "earlier reductions were possible without drastic reorganization of the administration. Further reduction meant real reform", cf. *ibid*, p. 52. The existence of surplus official was little questioned but the exact number was also little discussed. The League worked with the round number of 100.000 without any implied calculation. In Hungary where the problem also existed, it was mentioned that the "correct" number should be proportional to the reduction in territory, cf. League of Nations. "*Financial Reconstruction of Hungary. General Survey and Principal Documents*" (Geneva, 1926) p. 122. Of course the estimates of the number of officials reflected different ideas on the ideal "size" of the public sector in Austria and Hungary, and among the League experts, to judge from their standing on the issue of state enterprises, the notion of a reduced presence of the state in the economy was certainly very strong.
[19] League of Nations, "Financial Reconstruction of Austria", pp. 123-130 *passim*.

expenditure for 1924-25 similar to those of 1923-24, and the real value of revenues had been assessed to be “a little over 200 million gold crowns” for 1923-24[20], both of which nearly confirmed in our estimates. For the remaining years the accuracy of the estimates is less clear. The revenues figure for the 1920-21 budget are similar to the ones for 1923-24 and those for the next year’s show an increase which is consistent with the endeavours of the attempted stabilization under Finance Minister Hegedüs. Expenditures figures are very high for 1920-21, which appears reasonable as during part of this period the country was under Romanian occupation, and the reduction in the next year again seems consistent with Hegedüs efforts. The magnitudes of the values for 1922-23, however, appear to be affected by the choice of index to convert them into gold crowns, though the overall improvement in the fiscal situation could be explained by renewed efforts to achieve budget balance.

The League’s plan prescribed measures of economy in several directions in addition to deep reforms in the administration, but made very clear that a net *increase* in expenditure should be expected as the program was started. While, for example, some 10.000 to 15.000 officials were to be dismissed the League understood that the salaries of 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”[21]. Furthermore, public employees should receive special grants as compensations for the elimination of allocations in kind and of rent control[22]. Economies would be obtained with respect to state undertakings, monopolies and especially with respect to the operational deficit of the state railways, but these would be mostly offset by Increased expenses as pensions and as debt servicing[23].

Table 3

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, “Financial Reconstruction of Hungary”, 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, “Economic Nationalism in the Danubean States”, p. 322.

20 *Ibid*., p. 64 according to the experts’ report of December of 1923.
21 *Ibid*., p. 98.
22 *Ibid*., pp. 98-99.
23 *Ibid*., p. 111.

As in the Austrian plan the League action on the expenditure side comprised mostly shifts in the direction of expenditure and no overall cuts, so that the task of balancing the budget was solely placed upon taxes and revenues from monopolies and state enterprises. The League's experts seemed more aware of the importance of the effects of inflation over the real yield of taxation, as 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"[24]. Even so, the League devised some scope for fresh taxation. A new land tax would be introduced, but its contribution to total revenues on the first reconstruction period would be of only 3.7%, to be gradually raised to number close to 10% in the subsequent periods[25]. Increased yields would also be expected from the taxes on profits on house property, in view of the modifications in the rent control legislation, but these would represent less than 1% of total revenues of the first six months of the program and would be upgraded until reaching nearly a 10% share in the later periods. All other taxes would remain unchanged at least during the first six months of the program, after which the idea was to Increase the share of direct taxation mostly at the expense of the turnover tax, which would be reduced in absolute values. 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 net result of such tax alterations would be a slow increase in overall revenues in order to reach the "taxable capacity" of the country, which the League estimated as being 400 million gold crowns, on the second semester of 1926, i.e., the seventh period of the reconstruction plan. This value was actually twice the value of revenues at the beginning of the plan and though the League's experts seemed more aware of the possible effects of stabilization over taxes they did not expect a full repetition of the Austrian experience.

Much like what happened in Austria, revenues were grossly underestimated for the first six months of the program so that even with the expenditure targets exceeded by nearly 10% the budget was balanced during the first period of reconstruction. Revenues recovered so fast that in September of 1924, the fourth month of the scheme, the monthly budget presented a surplus, as it can be seen in Table 2. Again, the main contribution to this performance carne from taxes that the program left untouched, such as the turnover and commodity tax and customs duties[26]. Exactly like in the Austrian case, this extraordinary growth of the real yield of existing taxes by means of the "indexation"

[24] *Ibid*., pp. 64-66.
[25] *Ibid*., p. 112.
[26] With respect to customs duties it should be mentioned that by intervention of the Commissioner-General several imports prohibitions were substituted by tariffs during 1924. This fact in addition to a moderate recovery of imports explains part of the recovery of customs revenues.

provided by currency stabilization provided an unambiguous demonstration of the extent to which inflation was generating budget deficits. Unlike Austria, however, this automatic recovery of taxes was enough to eliminate the whole of the budget deficit very early in the program, thus showing the inexistence of any "structural deficits" or fiscal obstacles to the stabilization.

This fact was strongly emphasized by the Leagues final reports on both Austrian and Hungarian stabilization programs. According to the reports[27], the diagnostics of the Brussels Conference of 1920 that 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 heights of both inflations, it was argued, "the budget deficit mainly as a consequence of the currency instability, incapable of calculation, no such order of events was possible". Currency stabilization, i.e., pegging the exchange rate, was an indispensable pre-requisite to orderly state finances and indeed his judgement was that "budget equilibrium followed, it did not precede"[28].

In sum, the fiscal measures introduced by the League in Austria and Hungary were not responsible for the balancing of the budget during the first months of the stabilization programs: on the expenditure side, only a small reduction was implemented in Austria and an increase was observed in Hungary; and on the revenues side new taxes made negligible contributions to the astonishing increase in tax revenues obtained in both countries. That means basically that the budget was balanced almost entirely by the effects of price stability over the pre-existing tax structure, or that the inflation-corrected deficit if not altogether inexistent was very small.

3. Poland

There is no pre-war benchmark against which to evaluate the performance of Polish public finances, a problem we also found in the analysis of the Austrian and Hungarian cases. But the comparison of the budgets of the immediate post-war years with the ones for the later periods, especially those following the stabilization of the currency, is very revealing. One striking difference between the evolution of Polish and Austrian and Hungarian fiscal accounts is the fact that the levels of expenditure observed before and after the stabilization are roughly comparable for the latter two countries and in Poland public expenditure nearly tripled in real terms between 1922 and 1925, passing from 647.4 million zloty in 1922[29] to 1821.4 million in 1925. This Increase expresses the overall growth and development of the Polish public sector, which was being built out of the ruins of

[27] Both authored by Arthur Salter.
[28] League of Nations, "Financial Reconstruction of Austria", pp. 75-76 and "Financial Reconstruction of Hungary", p. 37.
[29] 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.

the bureaucracy left out by the three partitioning empires; it also reflected the pressures generated by the needs of reconstruction. Revenues could hardly accompany these tendencies at least until the stabilization in 1924[30] – when they jumped from a yearly level inferior to 400 million zloty to 1371.5 million, thus repeating the phenomena observed for Austria and Hungary of a spectacular recovery of public revenues immediately following the stabilization. These tendencies and their evolution up to 1925 can be seen in Table 4.

State revenues were greatly affected by inflation. In his careful report on Polish public finances, British financial expert E. Hilton Young pointed out that under indexing of taxes, delays and lags in tax collection, the "depression of industry and commerce" and the "undeveloped state of the revenue service" would be fully responsible for the disappointing performance of public revenues in 1923[31]. Many other observers took note of these problems, and it is noteworthy that the summit of former ministers of finance that gathered in mid-1923, saw the tax under indexing problem as the main obstacle to budget balance and suggested the introduction of the zloty as a mechanism to allow an effective indexation of the revenues of the state[32]. But even considering the effects inflation has had over taxes the contemporary estimates of what would be the level of revenues under stable prices were somewhat dismal. E. Hilton Young estimated that with allowance made for all due improvements in tax collection, for the indexation of existing taxes and the application of the new capital levy, "the maximum revenue which the state could hope to collect... was nearer to 800 than 900 million zloty during 1924"[33]. These estimates proved exceedingly modest as revenues for 1924 reached 1,371.5 million zloty, nearly three times revenues for 1923 even without considering the new property tax.

The influence of inflation over the real yield of taxes was explicitly recognized by the stabilization plan that started in December of 1923; indeed, one of the most important elements of this program was a law attempting to introduce indexation into the tax system effective January 1st 1924. In addition to that, the plan anticipated the collection of the new capital levy that had been introduced in June of 1923 that was scheduled to be collected during 1924-1926. This would represent an important contribution for State revenues especially during the first months of the program, as

[30] E. H. Young "*Report on the Financial Conditions of Poland*" (London, 1924), pp. 23-24. He also adds that "the scarcity of currency made taxes difficult to collect", which Nurske saw as a curiosity, cf. League of Nations "The Course and Control of Inflation", p. 24.

[31] L. Czarnozyl "*La Politique Monétaire en Pologne Reconstituée*" (Lausanne, 1930) p. 51, E. Strasburger "A Propos du Programme de la Conférance des Anciens Ministres du Trésor en vue d'Assainir les Finances Polonaises" *L'Est Européen* 4 (February, 1924) and F. Zweig "*Poland Between the Wars. A Critical Survey of Social and Economic Change*" (London,1944), p. 36. A typical computation used at that time to demonstrate the effect of inflation over taxes was the comparison of per capita burdens of taxation during and before the hyperinflation, such as in E. Hilton Young, "Report on the Financial Conditions of Poland", p. 32 and in Z. Landau/J. Tomaszewski, "The Polish Economy in the twenty century", pp. 43-44. According to these calculations the pre-war per-capita burden of taxation was of 7.0 dollars or 27.7 zloty, which was reduced to 5.0 zloty in 1920 or 1.61 dollars in 1921, reaching 71 cents in the first semester of 1923.

[32] E. H. Young, "Report on the Financial Conditions of Poland", p. 30.

[33] E. Rose, "The Progress of Financial Reconstruction in Poland", p. 11.

shown in Table 5. On the expenditure side, a new policy towards state enterprises, especially railways, would be enforced: State undertakings would be made Independent from the government to the extent of their operational budgets, but the government would retain the responsibility for their investment expenditure. During the first months of 1924, however, when the financial pressure over the government was the strongest, a domestic loan floated by the railway system in the end of January freed the government from expenditures in this account. General economies 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 leaves no doubt that austerity was not a priority as regards government spending, much on the contrary.

Table 4

Poland: Closed Accounts Budgets, 1921-1924 (millions of zloty)

	1922		1923		1924		1925	
	I	II	I	II	I	II	I	II
Revenues	247.7	143.9	203.4	175.1	539.9	831.6	818.2	800.2
Expenditure	322.5	324.9	488.0	473.5	620.4	986.4	926.0	895.4
Deficit	84.8	181.0	284.6	298.4	80.5	154.8	107.8	95.2
% Rev./Exp.	74.5	44.3	58.3	37.0	87.0	84.3	88.4	89.4
Property tax[b]	74.8	10.5	-	2.0	92.6	96.9	34.6	23.9
Invest. Expend.[c]	58.5	71.3	129.8	184.3	44.5[a]	37.4[a]	n.a.	n.a.
Coins/notes[d]	-	-	-	-	76.1	76.2	185.7	115.3
Debt[e]	16.3	12.4	33.7	1.8	76.3	16.2	15.9	15.2

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 "*Annual Statistics of the Ministry of Finance – 1924*" (Warsaw, 1926), pp. 173-176 and "*Annual Statistics of the Ministry of Finance – 1924-1927*" (Warsaw. 1931), p. 80-83.

Table 5 shows the development of the program during its first months, highlighting the recovery of revenues after the stabilization, the contribution of the capital levy and the overall results. As observed for Austria and Hungary the "indexation" of taxes effected by the stabilization of the currency contributed very strongly to the recovery of tax revenues. Table 5 distinguishes the contribution of the capital levy and that of the "all other revenues"; even though new taxes or Increases in existing ones were negligible as regards these "other" revenues[34] they more than tripled from January to April.

[34] E. H. Young, "Report oi the Financial Conditions of Poland", p. 29.

One can be sceptical, on the other hand, about the effectiveness of the "valorisation law", or the tax indexation law, as it had but little effect over revenues during January, when it was enacted, and after that it was rendered entirely useless by the stabilization of the currency[35]. As a matter of fact, as argued in E. Hilton Young's report on a tax by tax basis, its effects could hardly be assessed *ex-ante*, and most likely the indexation thus determined would not be like the "perfect" one introduced by the stabilization[36]. So it could hardly be taken for granted *ex-ante* that the tax reforms would be enough to balance the budget, as these reforms, even "improved" by the "perfect" indexation given by price stability, proved *ex-post* not enough to eliminate the deficit.

Table 5

Poland: Monthly Budgets, December of 1923 to May 1924 (millions of zloty)

	Property Tax	All other Revenues	Total Revenues	Invest. Expendit[b]	Total Expendit.	% Exp/ Revs.
1923-December[a]	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, "*Annual Statistics of the Ministry of Finance - 1924*", 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, "*Annual Statistics of the Ministry of Finance -1924-1927*", pp. 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. While it is argued that as the government was separated from the central bank then a balanced budget would have to obtain in one way or another, yet it is surprisingly neglected that the government retained considerable powers to print money, though only small notes and coins[37]. The government effectively exercised these powers very significantly in 1924 and 1925, as during these years the total issue of money by the Treasury summed up to approximately 450 million

[35] *Ibid*., Appendix IV, pp. 57-63.
[36] 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, cf. G. Zdziechowski "*The Finances of Poland, 1924-1925*" (Warsaw, 1925) pp. 45-46.
[37] For example, P. Robin "*La Reforme Monétaire en Pologne*" (Paris, 1932) p. 35. See also M. A. Heilperin, "Le Probleme Monétaire D'Aprés Guerre", pp. 135-136, F. Zweig, "Poland Between the Wars", p. 40 and Z. Landau/J. Tomaszewski, "Poland Between Inflation and Stabilization", pp. 278-279.

zloty, as shown in Table 4, which represented more than twice the existing money supply at the onset of the stabilization. Therefore, despite the usual rhetoric the fiscal "reforms" were not really strict and definitely did not imply *ex-post*, and even less *ex-ante*, the establishment of a fiscal regime characterized by balanced budgets. The reforms determined 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 4.

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[38], 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 surplus for 1924 of 74 million zloty, merely reproducing the Polish preliminary accounts[39]. Ragnar Nurske, in his classic study of post-war inflations, mentions Grabski's capital levy as "the keystone of the financial reforms and the basis of the budget balance In 1924"[40], and more recently Thomas Sargent, who draws 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 Grabski's financial reforms[41]. The failure to take proper 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, which centred their explanations for the stabilization on the alleged move to a balanced budget. Nurske, for example, argued that "over the period of five years [1923-1927], Polish financial history showed a marked interrelationship between fiscal policy and the value of the currency, and it is obvious that the former, when properly managed, was entirely capable of controlling the latter"[42]. These claims should be strongly suspected in view of the numbers presented in Table 4. For Thomas Sargent alike, the presence of budget deficits in 1924 and 1925 largely financed by printed "unbacked" money, and no apparent intention to depart from such "regime", contradicts directly his 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

[38] J. P. Young, "European Currency and Finance", 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.

[39] League of Nations, "The Course and Control of Inflation", p. 26. Nurske was actually quoting the 1925 report of finance minister G. Zdziechowski, which curiously makes a very clear exposition of the fact that the budget for 1924 ended with a sizeable deficit covered mostly by printing money, cf. G. Zdziechowski, "The Finances of Poland", pp. 31-41. T. Sargent, "The Ends of Four Big Inflations", pp. 71-72. Sargent even reproduces a table with budgetary data from J. Parke Young, *Ibid*., p. 65, though without mentioning that the figures for 1924 (for which no detail is given beyond the totals for revenue-obviously including issuance of coins and new debt as extraordinary revenues-and expenditure) and those for 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 actual budgetary closed accounts shown in Table 4, cf. G. Zdziechowski, "The Finances of Poland", pp. 104-115. Sargent, so it seems, was confused by the misleading presentation of the Polish budgetary accounts and by the generally crude, and often inappropriate, figures reported by Parke Young.

[40] League of Nations, "The Course and Control of Inflation", p. 27.

[41] F. Mlynarski "*The International Significance of the Depreciation of the Zloty in 1925*" (Warsaw, 1926) pp. 3-4.

[42] *Ibid*., p. 61.

government surpluses.

In August of 1925, after a year and a half of stable prices the zloty would be allowed to float and then stabilized again at a lower level. The London financial press attributed the devaluation to the "coin inflation"[43], 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 perhaps most importantly the deterioration in competitiveness determined by the wage inflation observed after the stabilization. Nurske himself denies 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"[44]. Sargent's explanation for the 1925 episode is somewhat awkward. Referring to the second part of the League of Nations report on post-war inflations[45], the part not authored by Nurske, he argued that the collapse has been due, on one hand to the "premature relaxation of exchange controls"[46], whose existence is not mentioned elsewhere in the literature[47]. On the other hand, as another determinant of the 1925 collapse, Sargent points to "the tendency of the central bank to make private loans at insufficient interest rates"[48], of which the League's report makes no mention; the only claim of the report is that there has been no credit contraction corresponding to the reserves losses after April of 1925, as prescribed by the so called "rules of the game", and it says nothing about credit at subsidized rates, neither any mention to that is found elsewhere. In sum, orthodox explanations of the Polish stabilization, such as Nurkse's and Sargent's, are essentially at odds with the fact that Polish stabilization was achieved by a program whose implied fiscal policy was clearly "unsound".

[43] League of Nations, "The Course and Control of Inflation".
[44] T. Sargent, "The Ends of Four Big Inflations", p. 73.
[45] 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, "The Course and Control of Inflation", p. 108.
[46] T. Sargent, "The Ends of Four Big Inflations", p. 73.
[47] Republic of Germany-Kriegslastenkommission, "*Germany's Economy, Currency and Finance*" (Berlin, 1924) pp. 74-98, J. M. Robert "*Dépréciation de 1a Monnaie et Équilibre Budgétaire: Étude sur les Finances Allemandes 1922-1923*" (Paris, 1926) pp. 137-144 and also C. Bresciani-Turroni, "The Economics of Inflation", pp. 67-74.
[48] Republic of Germany Kriegslastenkommission, "Germany's Economy, Currency and Finance", p. 90 and A. Fourgeuad, "*La Dépréciation et la Revalorization du Mark Allemand et les Ensaignements de L'Experience Monétaire Allemande*" (Paris, 1926) pp. 219-223.

4. Germany

An examination of the tax laws implemented before October 11th 1923 shows only rather unsuccessful attempts at indexing specific taxes and prices for public services[49]. At that date, however, a more comprehensive attempt was made in this direction, which was extended further by the two "emergency" fiscal decrees of December 7th and 19th[50]. AS far as tax revenues were concerned these decrees correspond to the "reforms" to which the stabilization has been usually attributed. It is important to observe that there was very little in the way of new taxes in these decrees, these tax laws were attempts to place the existing tax system "on a gold basis" and did not introduce any new taxes. It turns out that these emergency decrees were implemented simultaneously with the stabilization, and quite obviously indexation provisions are immaterial under stable prices. In these conditions it could very well be argued that these reforms were not really necessary. Besides, as it was observed as regards Poland, tax indexation is technically difficult so that the effectiveness of attempts in this direction cannot 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 6 was generated by the existing taxes only the "indexation" of the existing tax system provided by price stability[51]. Such "reforms" would not touch the "basic" or "original" fiscal disequilibrium that allegedly gave origin to the inflationary process, so that, if "drastic" fiscal measures are to be found, they should be sought on the expenditure side.

Table 6 shows the "dramatic progress towards a balanced budget"[52] in the figures for revenues and expenditures on a monthly and on a ten days basis. Table 6 considered the official figures deflated with exchange rates on a monthly basis up to July 1923 and after the stabilization[53] for the period in which the hyperinflation was in full swing – July/November of 1923 – this procedure seem to generate absurd values so that we used the nominal values available on a ten days basis and deflated this series with average exchange rates computed from weekly quotations.

[49] A. Fourgeuad, "La Dépréciation et la Revalorization du Mark Allemand", p. 219 and C. Bresciani-Turroni, "The Economics of Inflation", p. 357.
[50] T. Sargent, "The Ends of Four Big Inflations", p.83.
[51] Republic of Germany-Kriegslastenkommission, "Germany's Economy, Currency and Finance", p. 32.
[52] *Five days* after the stabilization the fiscal revenues in terms of gold marks Increased by 435%, cf. A. Fourgeaud, "La Dépréciation et la Revalorization du Mark Allemand", p. 218.
[53] Republic of Germany-Kriegslastenkommission, "Germany's Economy, Currency and Finance", pp. 32,77.

Table 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 "*Report on the Economic and Financial Conditions in Germany, revised to April of 1924*" (London, 1924), p. 28 and "*Report on the Economic and Financial Conditions in Germany*" (London, l925) p. 33, deflated with weekly exchange rates against sterling from *The Economist*, various issues (1923).

The recovery of tax revenues from the beginning of November, when they financed less than 1% of expenditure, to January of 1924 when the budget was balanced, was absolutely extraordinary. It is even more remarkable when we remember that *no new taxation* was introduced in the process and that this was purely the effect of (the absence of) inflation over taxes[54]. The contribution of expenditure cuts in balancing the budget was much less clear. The levels of expenditure appear to fluctuate widely during the hyperinflation period; in August and September it appeared exceptionally high while in October and May it was unusually low. On average the orders of magnitude of the levels of expenditure before and after the stabilization seems similar. Considering the annual figures for the whole fiscal years of 1922/1923 and 1923/1924 shown in Table 7 the later period is approximately 20% greater. Considering the average monthly expenditure for the six months before November and for the six months after we have 510 million gold marks against 481 million respectively or a 4% difference favourable to the earlier period. Whether or not there was austerity is a matter of which benchmark one chooses. The average monthly levels of expenditure for the first two quarters of 1924 were 469.2 million and 472.0 million gold marks; this would be significantly lower than the average for August-October of 1923 which was about 602.8 million gold marks but significantly higher than the corresponding averages for the first two quarters of 1923 which were 394.1 million and 415.9 million gold marks. One might even see fiscal austerity in that, but certainly nothing drastic or decisive and maybe not even significant.

Table 7

Germany: Revenues and Expenditures, 1921-1925 (millions of gold marks)

Year[d]	1921/22[a]	1922/23[a]	1923/24[a,b]	1924/25[c]
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 – Krieglastenkommission "Germany's Economy, Currency and Finance", 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, "Report on the Economic and Financial Conditions in Germany, revised to April of 1924", p. 33; (c) From J. W. F. Thelwell, "Report on the Economic and Financial Conditions in Germany", p. 30; (d) For fiscal years starting in March.

The figures on an annual basis from Table 7 reveal a picture that is very much similar to what we observed for Austria and Hungary, the levels of expenditure before and after the stabilization are similar and the improvement to the budgetary situation in the later period is entirely due to increased

[54] S. Andic/J. Veverka "The growth of Government Expenditure in Germany Since the Unification", *Finazarchiv*, 23 (1964), p. 237.

tax revenues. The "reforms" we observe 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 of little effect as far as the level of expenditure was concerned. In this respect it is remarkable that in 1922/1923, for example, payments on account of the Treaty of Versailles responded for 38% of total expenditure while for 1924/25 only 13% of total spending was budgeted to this purpose, thanks to the revision of the London Schedule of reparations payments accomplished by the Dawes Plan[55]. Another important development was the increase in expenditure for broadly defined social purposes – a natural development within the framework of the Weimar State – that would actually maintain a strong upward tendency throughout the 1920s[56]. Also often observed was the fact that a decree of October 27th established sharp reductions in the civil service; approximately 25% of all employees would be dismissed and 10% by January of 1924[57]. But as in Austria and Hungary, it has been less often observed that the wages of the remaining officials were increased by numbers between 50% and 90% in real terms after the stabilization, very much like what happened to the real wages of other categories of workers[58]. The public sector might have become less "labor intensive" as far as employment is concerned, but that might have had little effect as regards the public service wage bill. These changes certainly had the character of "reforms" in the sense of changed priorities of the activities of the public sector, yet in the strict sense of its effects on the net financial result of the government budget there was nothing really significant.

In sum, it seems clear that there was no "structural deficit" or "fiscal problem" to justify anything "drastic" in the fiscal terrain. 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 useful for the negotiations towards foreign financial support by reassuring the governments attachment to orthodox finance. In light of this, the often celebrated episode of the Rentenbank refusing to extend credit to the government beyond the pre-established limits would lose 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

[55] Republic of Germany-Kriegslastenkommission, "Germany's Economy, Currency and Finance", p. 78.

[56] 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, cf. G. Bry, "*Wages in Germany, 1871-1945*" (Princeton, 1960), p. 62, C. Bresciani-Turroni, "The Movement of Wages in Germany During the Dépréciation of the Mark and the Stabilization", *Journal of the Royal Statistical Society*, 92 (1929), p. 395 and International Labor Office, "Workers' Standard of Living in Countries with Depreciated Currency", pp. 16-17. As regards government officials specifically the behaviour of their real wages, as a percentage of 1914 levels is summarized below:

	Oct. 1923	Dec. 1923	Mar. 1924	Jun. 1924
skilled	44	58	71	87
unskilled	61	66	79	99

[57] C. Maier "Inflation and Stabilization in the Wake of the Two World Wars: Comparative Strategies and Sacrifices", in Gerald Feldmen et al (eds.), "The Experience of Inflation", p. 108.

[58] Considering the levels of expenditure as of Table 4 and GNP figures from Z. Landau "National Income in Historical Research (On Material from the Interwar Period)" *Acta Poloniæ Historica* 33 (1976), p. 104.

without all the more decisive proclamations of support to the principles of "sound" finance. It is though a quite different matter to argue that fiscal austerity as such had fundamental importance for the stabilization.

5. 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 Germany it rose from 14.895 in 1913 to 25.095 in 1925 and in the UK from 12.895 in 1910 to 26.195 in 1920[59]. Similar developments appear to have taken place also in successor states: we observe ratios of about 18% for Poland in 1924[60], about 20% in Hungary in 1925/26 and about 15% for Austria. Other than that the trend is unambiguous of an increased state participation in economic affairs, either in terms of direct spending or an overall *dirigisme*, either for military or social motivations. The provision of "permanent" sources of revenues to accommodate that would certainly configure a major problem and it would be perfectly legitimate to conjecture that the solution for this problem was brought by the fiscal measures accompanying the stabilization, yet this is quite misleading. The detailed examination conducted in this chapter of the fiscal measures implemented during the stabilization seems to demonstrate that the problem was mostly solved at that point. This means basically that "true" tax reforms had taken place at some point *before* the stabilizations, most likely during stabilization programs such as Erzberger's in 1921 Germany, Hegedüs in 1921 Hungary and Michalski's in 1922 Poland. All these programs effectively addressed the fiscal issue, but the fact that they failed to arrest inflation is a powerful indication that the driving force of the inflationary process lied elsewhere. This is made very clear in this paper by the fact that these countries experienced a hyperinflation and at the same time they seemed to have inflation-corrected deficits that were close to zero or at least very manageable.

The fiscal "reforms" introduced during the stabilization comprised mostly shifts in the direction of expenditure that reflected very significant changes in national priorities and in policy options, yet as far as the net budgetary result was concerned there was nothing "drastic", "dramatic" or "energetic" in these reforms. The dismantling of the overstaffed bureaucracies of the former empires did *not* determine any reduction in Public expenditure for many new influences acted on the contrary direction. Most notably the marked increases in government expenditure for social purposes, and the recomposition of wages of public employees, more than made up for the economies often quoted as

[59] Considering figures from B. R. Mitchell "*European Historical Statistics*" (New York, 1978) pp. 377 and 412.
[60] Respectively from C. L. Holtfrerich, "Germany and Other European Countries in the 1920s", p. 131, T. Sargent, "The Ends of Four Big Inflations", p. 83 and C. Brescisni-Turroni, "The Economics of Inflation", p. 355.

indications of strict austerity oriented fiscal policies.

The recovery of the real yield of taxation after the stabilization was absolutely extraordinary in all countries. This means basically that budget deficits were to an overwhelming extent products of inflation rather than its driving forces. It is very difficult to argue that balancing the budget was the key to the stabilization of these hyperinflations when it is clear that the inflation-corrected deficits were either small or inexistent. In fact, since after the stabilization the money supply would Increase sharply in response to the remonetisation of these economies a case could be made that a fiscal deficit could help to accommodate that; yet since central banks could create money against “real bills” without any limit in all four countries, this was actually the channel through which the money supply was increased. The important lesson of these episodes is that the size of the budget deficit when inflation is high means little as far as stabilization policy is concerned. Simplistic arguments prescribing increased taxation and fiscal austerity wherever a deficit is observed should be simple remainders of how close economics sometimes comes to accounting.