> *A Roman who was born under Theodosius and died under Romulus Augustulus had seventy years in which to pass through the changes which Austria has seen in three.*[1]
>
> G. M. Young to Treasury, 18 March 1922

> *Political stability, when it comes, often happens to a society quite quickly, as suddenly as water becomes ice.*[2]
>
> J. H. Plumb, "The Growth of Political Stability in England, 1675-1725"

# Hyperinflation as a Catalyst of Transformations

## Path-dependence through accelerated dynamics in post-WWI Austria

History matters. We can learn from it. Our present opinions, goals and actions are based on past experiences and shaped by what we know of them. But some moments in the past matter more than others. Aware of this, political scientists, economists and economic historians have coined the idea of *path dependence* in order to describe how certain institutions and practices get entrenched and prevail over time.[3] In these cases, a set of decisions taken early on can posit society on a path that becomes increasingly difficult to leave.[4] The historical trajectory then becomes *path dependent*, as alternative choices, once possible and practical, become less and less likely to emerge.

---

[1] Bank of England Archive (BoE) OV / 28/52, Austrian Rehabilitation: Letter from Young to Treasury, 18 Mar. 1922.

[2] J. H. Plumb, *The Growth of Political Stability in England, 1675-1725* (London 1967), p. xvii.

[3] Economic historians have mainly concentrated on identifying the path-determining effect of institutions. The quantitative approach is exemplified by Melissa Dell, "The Persistent Effects of Peru's Mining Mita" in Econometrica, 78/6 (2010), pp. 1863-1903. Political scientists have been more interested in how path-dependence is overcome to produce institutional change. See Wolfgang Streeck and Kathleen Thelen, "Introduction: institutional change in advanced political economies" in Wolfgang Streeck and Kathleen Thelen (eds.), *Beyond continuity: institutional change in advanced political economies* (Oxford and New York 2005), pp. 1–39.

[4] The classic contemporary example from every-day life is the unpractical arrangement of the letters on our keyboards. Paul A. David, "Clio and the Economics of QWERTY" in American Economic Review, 75/2 (1985), pp. 332–37.

Times of transition and the transformations that accompany them often incur such fateful choices, when decisions are made that are likely to delineate the path of society's political and economic development into the future.

Among the largest and most far reaching transformations brought on by the end of the First World War was the dismemberment of the Austro-Hungarian Empire. In its place emerged a number of new countries, all of which faced the challenge of transitioning from forming part of an Empire to becoming full-fledged independent nation-states. What had once constituted a single economic space in Central Europe was now divvied into separate national economies, each if which soon adopted its own currency.[5] In Austria as well as Hungary and Poland, this transition was marred by the experience of hyperinflation. As this paper argues, these two violent bouts of exchange-rate depreciation and price increases Austria experienced in 1921 and 1922 had path-determining effects.

Transitions – the sudden and often loosely (not to say lousily) coordinated transformation of a society and its institutions – are frequently accompanied by financial instability or collapse. The Bolshevik revolution completely destroyed the value of Russian paper money (deliberately, Lenin might have added, though Keynes would not believe him).[6] And in more recent times, the dismemberment of Yugoslavia during the early 1990s was accompanied by what probably still counts as the worst European episode of hyperinflation.[7] Not each and every turbulent transition is coupled with financial collapse and there are certainly cases of disastrous currency failures, such as present-day Zimbabwe, where hyperinflation does not serve as a

[5] Hans Kernbauer, *Währungspolitik in der Zwischenkriegszeit*, (Vienna 1991), p. 25.
[6] John Maynard Keynes, *The Economic Consequences of the Peace*, (New York 1920), p. 368.
[7] James Lyon, "Yugoslavia's Hyperinflation, 1993-1994: A Social History" in East European Politics and Societies, 10/2 (1996), pp. 293-327.

backdrop to political transition.[8] More often then not, however, hyperinflations and transitions go together. In the Austrian case hyperinflation might best be conceptualized as a catalyst of transition, one that sped up the transformative dynamics, thereby destroying alternatives that could have been taken had there been more time.

To paraphrase Milton Friedman, hyperinflation is always and everywhere a *modern* phenomenon.[9] To occur, large quantities of paper money need to constantly be printed, a fact that requires modern printing presses, presupposes the circulation of paper money and necessitates access to an advanced paper industry.[10] Early cases of high inflation precipitated the transition of more than one dynasty in Imperial China and a flood of paper money (*assignats*) accompanied the French Revolution, but hyperinflations of truly catastrophic proportions only came about in the 20th century.[11] In the pre- and early-modern era, when money was synonymous with gold or silver coins, there could be no hyperinflation. But in a (not too distant) future, when states make away completely with physical money and replace it with bits and bytes, hyperinflations could develop a previously unknown level of velocity and destructiveness.

Beyond always being a modern phenomenon, each hyperinflation is also always the consequence of large budgetary deficits and lack of funding. The reason for printing huge sums of new money is always to finance government expenditure not covered by foreign borrowing or taxation. It is this fact that explains the increased likelihood of hyperinflations during periods of transition, when the tax-collecting

---

[8] At the time of completion of this article it still remains to be seen if Venezuelan hyperinflation will be accompanied by a regime change.

[9] Milton Friedman, "The Counter-Revolution in Monetary Theory" in Institute of Economic Affairs Occasional Paper, 33, (London 1970).

[10] Forrest H. Capie, "Conditions in which Very Rapid Inflation has Appeared" in Forrest H. Capie (ed.), *Major Inflations in History* (1986), pp. 3-56.

[11] Don Paarlberg, *An analysis and history of inflation* (1993).

power of the state disintegrates and an uncertain political future makes sovereign borrowing practically impossible. Once inflation accelerates, the problem quickly exacerbates because whatever tax revenue the state succeeds to procure rapidly looses value whilst nominal expenditures rise ever more quickly. As the budget deficit widens, devouring larger and larger amounts of newly printed money, hyperinflation is fueled by its own circular logic that is difficult to escape.

Both these pre-conditions – modern paper money and a significant budget deficit – were present in post-WWI Austria. Paper money had been circulating in Vienna since the 18th century and from 1892 onwards the Austro-Hungarian bank in Vienna had printed bank notes denominated in *Kronen* for the entire Empire.[12] Far more than other belligerents, Austro-Hungary had financed mobilization, armament and warfare almost entirely by issuing debt that could be monetized at the Austro-Hungarian Bank and not through taxation.[13] Because there was relatively little to buy in a war-economy, most goods were rationed and prices were controlled, inflation was high but steady, with prices doubling roughly every twelve months. But after the end to hostilities, as new goods flooded the market and price restrictions were lifted, inflation soon began to rear its head more vigorously. Meanwhile, facing high budgetary expenditures and insufficient tax revenues, the Austrian government continued its war-time policy of covering a budget deficit through borrowing new notes and mounting sovereign debt.[14]

---

[12] Siegfried Pressburger, *Oesterreichische Notenbank 1816-1966* (Vienna 1966).

[13] Kernbauer, *Währungspolitik*, p. 21. Herbert Matis, "Notleidende Millionäre bevölkerten damals Österreich" in Helmut Konrad and Wolfgang Maderthaner (eds.), *Das Werden der Ersten Republik ... Der Rest ist Österreich*, vol. II (Vienna 2008), pp. 33-48 , pp. 34-6.

[14] On Austrian postwar inflation see foremost: Karl Bachinger und Herbert Matis, *Der Österreichische Schilling - Geschichte einer Währung* (Graz 1974). Christian Suppanz, *Die österreichische Inflation 1918-1922*, [Forschungsbericht No. 111, Institut für höhere Studien], (Vienna 1976). Karl Bachinger and Herbert Matis, "Die österreichische Nachkriegsinflation 1918-1922" in *Beträge zur Historischen Sozialkunde*, vol. 4 (1986), pp. 83-91. Alice Teichova, "Die Inflation der 1920er Jahre in Mitteleuropa im Vergleich" in *Beiträge zur historischen Sozialkunde*, vol. 4, (1986).

Transition and transformation are often used interchangeably. When studying transitions, we are interested in the transformations that these shifts - from one set of social, political and economic institutions to another – produce. Transitions without noticeable transformations are hardly transitions at all. For many people in Western Germany, uniting with the former German Democratic Republic in 1990 was not much of a transition or transformation (except for West-Berliners of course). For the Germans in the East, however, transitioning from Real-Socialism to Market-Socialism incurred many a transformation, politically, socially, and not least financially. And whereas the East-German transition had a clear destination, many others around that time did not. The Yugoslav transformation was soon mired with ethnic strife and a civil war that lasted for ten years. The Czechoslovak transition irrevocably transformed the country into two sovereign states by 1993. And the Soviet collapse during the 1990s was a poignant reminder of the speed at which a mighty Empire can disintegrate. The Yugoslav war was accompanied by hyperinflation, the Czechs and Slovaks managed to separate without a financial crisis, while the challenges of post-Soviet transition gave way to Russian hyperinflation of the early1990s. Hyperinflation often accompanies transition, so what transformative role does it play?

At first glance, it would seem obvious that hyperinflations have a negative bearing on transition. Hyperinflations destroy the value of money and impoverish citizens by rendering savings, pensions and fixed incomes worthless. They undermine the financial sector by destroying banks' liquid capital reserves, by making loans and mortgages on their books valueless and foreign debt more costly. And they weaken the economy, as entire business sectors become unprofitable and consume their capital to buy time, amortization is reduced and profits cannot be accumulated. Hyperinflations destroy trust in public institutions, in the credibility of central banks and finance ministries, in the stability and even the viability of newly configured states. Unless one shares Lenin's penchant for complete destruction of the capitalist system, hyperinflations can certainly have but a negative impact on the outcome of transitions.

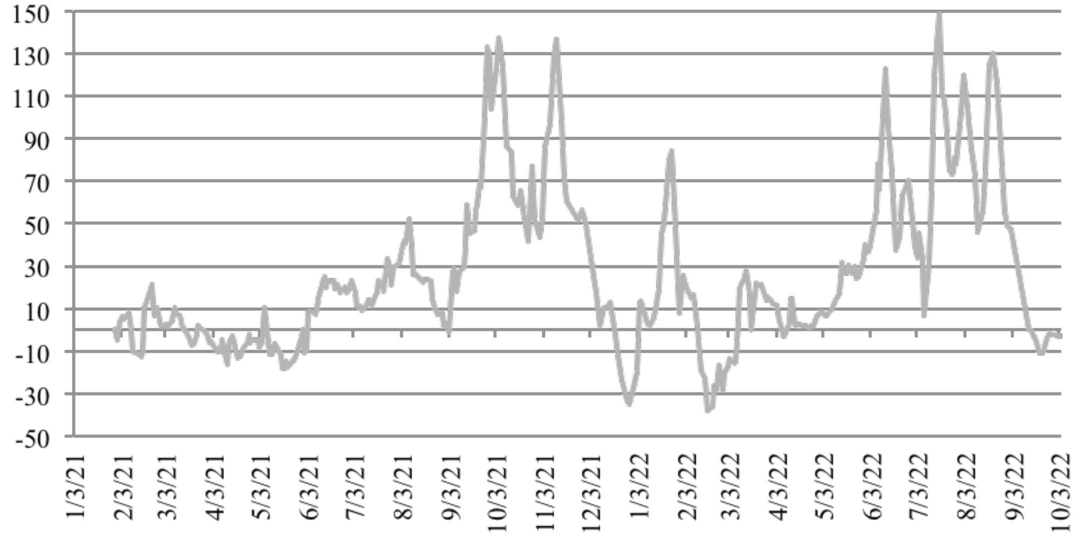
While it is impossible to argue with the negative financial and economic effects of hyperinflation, the nature of its impact on political and social transformation is less than obvious. As I wish to show here, the role of hyperinflation in the transformation of post-WWI Austria is best conceptualized not as a (negative) causal one, but as that of an accelerator, as a (positive) catalyst of existing dynamics, by which processes already under way were (dangerously) sped up. As I aim to show for the Austrian case, hyperinflations, through accelerating the dynamics of transformation, can destroy the existence of alternatives that might have else been chosen had the pace of transition been slower. It is in this sense that hyperinflations have a crucial path determining function during transition.

* * *

Hyperinflation is loosely defined as a rate of inflation that exceeds fifty percent per month. Such periods are usually rare and short, but they are preceded and often followed by longer stretches of relatively high inflation. In post-WWI Austria, monthly inflation rose twice above fifty percent, the first time between June and December 1921 and then again between June and August 1922. Inflation correlated closely with currency depreciation, which is easier to measure. Whereas there is only one exchange rate, there are a myriad of prices in the economy. And while the historian has access to almost continuous data on the exchange rate, it is difficult to track down daily data for all of the most important goods. It is thus practical to track the exchange rate when illustrating Austrian inflation (*Graph 1*).

The graph chosen here tracks the exchange rate to calculate the currency's depreciation per month on a daily basis. As expected the two periods of hyperinflation coincide with two periods when depreciation per month was above 50%. At its most extreme, in August 1922, month-on-month depreciation reached a staggering 150 percent.

*Graph 1:* Daily month-on-month depreciation of the Austrian crown vis-à-vis the U.S. dollar: 1 March 1921 to 31 October 1922.




*Source:* Austrian daily press.

The eyewitness Jan van Walré de Bordes published a first study of Austrian hyperinflation in 1924. Upon analyzing data on prices, the exchange rate and money supply he argued that the growth-rate of money supply lagged behind that of prices and that both were outpaced by depreciation, which led him to conclude that currency depreciation had been responsible for inflation.[15] As he explained, sudden drops in the value of the currency made Austrians run out in search for real goods before they got more expensive. Weary about future exchange loss they tried to convert their money into goods or foreign currencies, further fueling depreciation and price increases.

[15] Jan van Walré de Bordes, *The Austrian Crown: Its Depreciation and Stabilization* (London 1924), pp. 144-53.

Contemporaries already noted that such behavior was highly susceptible to rumors and swings of confidence.[16] In 1956 the economist Philip Cagan formalized this insight with a model in which inflation rates were determined by expectations about future prices. The expected cost of holding on to one's cash, i.e. the expected rate of inflation, defined the amount of real cash balances people were willing to hold on to. With a certain amount of cash in their possession, a change in the rate of expected inflation, due, say, to a sudden drop of on the exchanges, made people convert more money into real goods (especially if prices were slow to react).[17] As citizens went out to buy things, prices rose until they reached a level at which it was no longer worth converting cash into goods, or to put it differently, at which the real value of money they held had been reduced to acceptable levels.

With a fall in real cash balances came a rising velocity of money. When rates of inflation rise and the exchange rate increase exponentially, people desire to hold less and less local currency. The speed at which money is spent thus increases. As people prefer spending their money to seeing it turn worthless, real goods are bought up and a consumption frenzy ensues. The accelerated velocity of money, the average speed at which it is spent, materializes in people's general haste to obtain goods, cash in paychecks, or seek foreign exchange. If it is true that the growth in money supply and

[16] "The valuation of money in terms of goods and foreign exchange always includes a speculative aspect, i.e. it always includes the expected development of future conditions. If one expects depreciation to continue because the Government is unwilling to limit its usage of the printing press, then money will be valued lower than it would have been valued if no more inflation had to be expected. Because one expects depreciation to continue, one tries to get rid of the domestic currency which loses purchasing power on a daily basis by buying goods, stocks or foreign exchange." Ludwig Mises, "Inflation und Geldknappheit. – Gegen eine weitere Verwendung der Notenpresse." in *Die Neue Freie Presse* (henceforth *NFP*), 11 Mar. 1922. See also Friedrich Herz, "Der Economist. - Entspricht der Kurswert der Krone unserer wirtschaftlichen Lage?" in *NFP*, 18 Jan. 1921.

[17] The real cash balance of an economy is the real value of cash circulating within the economy outside the Bank of Issue. It equals nominal circulation divided by the price level or exchange rate. During periods of high inflation, both circulation and prices increase, but prices increase faster so that real cash balances decline. Philip Cagan, "The Monetary Dynamics of Hyperinflation" in Forrest H. Capie, *Major Inflations in History* (1991). The decline in cash balances did not go unnoticed by Wilhelm Rosenberg, who pointed out that before the war Austrian circulation stood at 500 million Swiss francs whereas it had fallen to 200 million by May 1922. *NFP*, "Amerikanischer Vorschuss und Notenbank." 24 May 1922.

rise of finance in 19th Europe accelerated each and everyone's own temporal experience of life, as argued by Georg Simmel, than such sensations were only amplified by hyperinflation.[18] Thus De Bordes eloquently describes how a sudden depreciation and subsequent panic quickening the tempo of life:

> When prices are rising from week to week, or it may be from day to day, and when it is known that the money received to-day will be worth less a few days hence, it becomes essential to part with it as quickly as possible and to buy in place of it goods which will not lose their value. To hold money meant inevitable loss [...] The art was to pass on one's money, as a kind of Black Jack, as rapidly as possible, to somebody else, to get rid of it *coûte que coûte*, as an infected thing, and to buy goods before there should be a further rise in prices. [...] On days when there was a sharp rise in prices there would be a run on the shops. Prices would then increase from hour to hour, and the public were content to buy whatever they could lay their hands on.[19]

The acceleration of economic life spilled over into all spheres of society. Under sped-up conditions, decisions could not be postponed. As money and nominal assets dwindled quickly, some of the choices, made under pressure and without complete information, proved fateful. The number of suicides in Vienna as a share of total deaths dropped unexpectedly in 1922, suggesting that people had simply less time to ponder taking their own lives.[20] Similarly, pregnant women had less time to decide whether to keep a baby or terminate the pregnancy prematurely. The number of births out of wedlock in relation to total deliveries reached a low in 1922 (12.4%), followed by 1923 (14.3%) and 1921 (16.5%), suggesting that the number of illegal abortions rose with hyperinflation.[21] Overall, however, the most important and unfortunate

[18] Georg Simmel, *Philosophie des Geldes* (Leipzig 1900), pp. 506-54.
[19] van Walré de Bordes, *The Austrian Crown*, pp. 163-4.
[20] Kammer für Arbeiter und Angestellte in Wien, *Wirtschaftsstatistisches Jahrbuch 1926* (Vienna 1927).
[21] In 1904 this figure had stood at 30.5%. After reaching its nadir in 1922, it gradually rose back to reach 24% by 1932. Abortion was illegal in Austria and abortion arrests increased from 288 in 1921 to 376 in 1922 and 460 in 1923. See Robert Hofstätter, *Die arbeitende Frau: Ihre wirtschaftliche Lage, Gesundheit, Ehe und Mutterschaft* (Vienna 1929). *Statistisches Jahrbuch der Stadt Wien, für das Jahr*

consequence of the accelerated dynamics of hyperinflation was the rise to power and entrenchment of the Christian-Social party.

* * *

Already before the abdication of the Habsburg Emperor Charles I. on 11 November 1918, a broad coalition government including all political parties had been formed under the leadership of the Socialist Chancellor Karl Renner. First elections in February 1919 saw the Socialists win forty-one percent of votes, followed by the Christian Socials with almost thirty-six percent and the Pangermans with eighteen.[22] Two more governments uniting the parties were formed under Renner, but the coalition began to fall apart after the Christian-Socials left in June 1920. New elections on 17 October 1920 reduced the Socialists' parliamentary presence to 69 seats, while, with 85 out of 183 seats, the Christian Socials now emerged as Austria's strongest party.[23] The historian Karl Vocelka rightly points out that this political constellation – two strong parties vying for power– dominated Austria both in the interwar era, and in the one following 1945. But after World War Two, both parties mostly shared control in coalition governments, whereas during the years following World War One the Christian-Socials would not relinquish their exclusive grip on power. The dynamics of hyperinflation, and the way it was ended, help explain the conservative's extraordinary success in holding on to power during the 1920s.

Studying how to terminate hyperinflations, the economist Thomas Sargent argued in 1981 that debt issued by governments and the unlikelihood of budget surpluses to repay that debt, were responsible for people's expectations about inflation.[24] High

---

*1908* (Vienna 1910), p. 58 and *Statistisches Handbuch für die Republik Österreich*, 14 (Vienna 1933), p. 17.

[22] Karl Vocelka, *Österreichische Geschichte* (Munich 2005), p. 98.

[23] Dieter Nohlen and Philip Stöver, *Elections in Europe: A Data Handbook* (2010), p. 198.

[24] Thomas J. Sargent, "The end of four big inflations" in Robert E. Hall (ed.), *Inflation: Causes and Effects* (Chicago 1983).

inflations increase government deficits as tax revenues fail to keep up with expenditures, thereby creating a vicious spiral.[25] To exit hyperinflation, a credible regime change is needed that puts an end to the circular logic. To cut the vicious circle, then, the new regime has to credibly suppress the budget deficit, end domestic borrowing and terminate the issue of new bank notes. In most cases this requires a foreign loan large enough to cover the budget deficit until stabilization is established and reforms show their desired effect.[26]

Indeed, from the outset, the conservative government that had come to power in Austria at the end of 1920 looked for foreign help to fight inflation. But repeated attempts at obtaining a foreign loan in 1921 came to naught and when an international conference convened in Genoa in spring 1922 failed to provide results, the Christian Social Prelate Ignaz Seipel ousted his colleague and Chancellor Johann Schober to take over himself at the helm of government. Throughout the summer months inflation picked up as Seipel unsuccessfully tried to garner support for a foreign loan. In July, August and September 1922 Austrian hyperinflation reached its highest levels. Only when the League of Nations finally took up the Austrian question in August, and after an agreement was signed in Geneva in October, in which Austria promised reforms in return for loan guarantees from several foreign countries, was hyperinflation terminated.[27]

Foreign loan guarantees allowed the Austrian government to borrow credibly and terminate inflation. With foreign money, technical assistance and under direct supervision of the League of Nations, Seipel and the conservatives were able to stabilize the exchange rate and stop the galloping prices. The reforms Austria agreed

[25] Kernbauer, pp. 35-8.

[26] Julio A. Santaella, "Stabilization Programs and External Enforcement: Experience from the 1920s" in Staff Papers – International Monetary Fund, 40/3 (1993), pp. 584-621.

[27] Nicole Piétri, *La reconstruction financière de l'Autriche 1921-1926* (Geneva 1970).

to implement in return had several "path-determining" features. They bestowed on Austria a rigid programme of budgetary austerity and of administrative reforms, but no less importantly and probably as intentionally, they installed Seipel safely in power. The subsequent years and reforms were used to cement the political position of the Christian-Social party and weaken that of its Socialist rivals. [28]

It were the dynamics of hyperinflation that had hastened the process of party rivalry and thereby quickened political consolidation. If in normal times both parties might have joined into coalitions or rotated in and out of power, hyperinflation and the deteriorating situation had made political consolidation paramount. The worsening economic situation in Austria had kindled fears that unification with Germany might become inevitable, and had therefore startled foreign governments into action. In return for help, they had desired a strong government with expanded executive powers, capable of implementing unpopular reforms. In fact, the Geneva protocols foresaw the partial elimination of parliament's authority and thereby a weakening of socialist opposition. Meanwhile, the Socialist party under the leadership of Otto Bauer could not but support Seipel's programme to terminate hyperinflation. Even though the reforms and the envisioned curtailment of parliament were loathsome, there was simply no time left to fight Seipel or come up with an alternative solution anymore – eventually the Socialists voted with Seipel on the crucial *Ermächtigungsgesetz*.[29]

The entrenchment of the Christian-Socials under the leadership of Chancellor Seipel had long-lasting consequences. It created resentment within the Socialist party

[28] Though in full control of the Vienna Province and posing a serious political threat the Socialists never managed to dethrone the Christian Socials in the interwar period. Felix Czeike, "Wien" in Erika Weinzierl and Kurt Skalnik (eds.), *Österrreich 1918-1938: Geschichte der Ersten Republik*, vol. II, pp. 1043-66.

[29] Not that passing the *Ermächtigungsgesetz* was easy as the Socialists drove a hard bargain and managed to water it down significantly. Nathan Marcus, *Credibility, Confidence and Capital: Austrian Reconstruction and the Collapse of Global Finance, 1921-1931*, unpublished Ph.D. thesis, New York University (2012), pp. 111-25.

and among Austrian workers that erupted violently during the July 1927 unrest. It reduced the readiness to compromise on the conservative side, further polarizing the political landscape. And with little chances of political rotation, corruption and mismanagement flourished within the conservative administration.[30] During the 1920s both sides also started financing and arming their paramilitary organizations (the Socialists publicly, the Christian-Socials secretly), blaming the other side of clandestinely preparing a *coup d'état*. Civil war almost broke out in 1929 and again 1931. Finally, the 1930s witnessed the gradual dismantlement of parliamentary democracy through actions taken by the Christian-Social Chancellor Engelbert Dollfuss, resulting in the outbreak of violent clashes between the two armed groups in 1934, the establishment of a fascist dictatorship and the crush of Austria's Socialist party.

Economically, the dynamics of hyperinflation had important path-determining properties, too. At first, the effects of post-war inflation on the Austrian economy seemed largely positive. Once the post-war economic crisis of 1919 passed, production expanded and unemployment fell, with full employment reached by 1921.[31] This was to a large part due to the return of normal economic conditions and the return of coal supplies, the lifting of war restrictions and the release of kept up demand, but no less important was the competitive advantage Austrian exporters gained from the depreciation of their currency. With the change in prices and wages lagging behind the fall of the exchange rate, Austrian exports were cheap by

[30] Karl Ausch, *Als die Banken fielen: Zur Soziologie der politischen Korruption* (Vienna 1968).
[31] Karl Bachinger and Herbert Matis, "Inflation in Austria after World War I (1918-1922)" in Herbert Matis (ed.), *The Economic Development of Austria since 1870* (Cambridge 1994), p. 320.

international standards. Austrian exporters flourished, providing employment for workers in factories, commerce and transportation.[32]

Once inflation turned into hyperinflation, however, and prices and wages began to adjust more rapidly, the inflation premium exporters had enjoyed evaporated.[33] Falling profits and high inflation were detrimental to capital accumulation and therefore to amortization and new investments. Indeed, Austrian industries often failed to pay for the amortization of their physical capital, while the proceeds from sales did not cover the costs of replenishing stocks. As the export-boom came to an end unemployment rose and increased fourfold from 1921 to 1922.[34] Facilitated by the inflationary economy, which made almost any investments profitable, 1,200 new factories had been founded in Austria since 1919, but many investments were unsound and once hyperinflation ended they turned out to be unsustainable.[35]

The effects of hyperinflation cast a long shadow over the country's subsequent economic development. For the reminder of the 1920s Austrian producers struggled to

[32] Hans Kernbauer, Eduard März and Fritz Weber, "Die wirtschaftliche Entwicklung" in Erika Weinzierl and Kurt Skalnik (eds.), *Österrreich 1918-1938: Geschichte der Ersten Republik* (Graz 1983), pp. 343-79.

[33] It is worth quoting the classic account by Charles Gulick: "After several months of sham prosperity, however, the adverse consequences of the inflation became apparent. Other countries began to protect themselves against Austrian 'currency dumping' by high tariffs and import prohibitions. The faster the crown fell, the more difficult it became for the entrepreneur to secure the foreign exchange needed for the purchases of raw materials. From one turnover to another the working capital of industry became smaller and smaller. Restriction of production was the unavoidable consequence. Credit was dear, 20 per cent and more, and difficult to obtain. The rate of exchange rushed down so rapidly that the whirling note-printing presses were unable to maintain the pace. Thus the gold value of the continuously increasing circulation rapidly decreased, producing a grave tightening of money. Therefore, toward the end of the summer of 1921, the period of good trade, the *Inflationskonjunktur*, was approaching its end." Charles A. Gulick, *Austria: From Habsburg to Hitler* (Los Angeles 1948), vol. I, p. 157.

[34] Unemployment grew further after stabilization, though partially due to the reforms initiated and not just because of stabilization. See Elmus Wicker, "Terminating Hyperinflation in the Dismembered Habsburg Monarchy" in The American Economic Review, 76/3 (1986), pp. 350-64. Kernbauer, *Währungspolitik*, p. 48. Bachinger and Matis, "Die österreichische Nachkriegsinflation 1918-1922", pp. 86-7. Fritz Weber, "Grosse Hoffnungen und k(l)eine Erfolge. Zur Vorgeschichte der österreichischen Finanzkrise von 1931" in Oliver Rathkolb, Theodor Venus and Ulrike Zimmerl (eds.) *Bank Austria Creditanstalt - 150 Jahre oesterreichische Bankengeschichte im Zentrum Europas* (Vienna 2005), pp. 180-95, pp. 180-1.

[35] Fritz Weber, "Zusammenbruch, Inflation und Hyperinflation Zur politischen Ökonomie der Geldentwertung in Österreich 1918 bis 1922" in Konrad and Maderthaner (eds.), *Das Werden der Ersten Republik*, vol. II, pp. 7-32, p. 18.

become profitable and expand production. In urgent need of new machines and infrastructure but lacking capital, they were forced to rely on expensive bank credit for investments and amortization. Hyperinflation and depreciation had bestowed a high level of interest-rates on the country, making it difficult for all but the most productive Austrian businesses to turn out a profit. Surrounded by tariff-barriers and cut-off from historical supply lines and customer groups, Austrian businesses had to not just modernize, but also to realign their production. Without hyperinflation, they might have had the time to do so gradually, but the accelerated inflation left businesses with too little time and means to face the challenge of adjustment. Instead capital reserves were spent on faulty investment decisions or eaten up by hyperinflation.

The financial impact of hyperinflation on Austrian banks was similarly serious. First, there was an unhealthy growth of the financial and commercial sector fueled by the quick gains inflation made possible. From 1919 to 1925 the number of banks and financial institutions doubled only to fall back again thereafter.[36] Second, the banks, facing the loss of capital and deposits, aggressively bought corporate shares, while increasingly indebted producers turned to credit to uphold production, expanding an already overblown banking sector even further.[37]

Like Austrian industrial producers, the banks too were confronted with a new reality, in which much of their traditional business was now located beyond national borders. And again, without hyperinflation, adjustment to the new conditions could have been pursued prudently and successfully, but currency depreciation had literally destroyed the entire banking apparatus to its core. The destruction of capital, savings

[36] Fritz Weber, “Zusammenbruch, Inflation und Hyperinflation“, p. 18. See also, Max Sokal, “Austrian Banks“ in Annals of the American Academy of Political and Social Science, vol. 98, Supplement: Present Day Social and Industrial Conditions in Austria, (1921), pp. 34-40.

[37] Fritz Weber, “"Grosse Hoffnungen und k(l)eine Erfolge." pp. 180-1.

and reserves had serious long-term consequences as the banks were forced to rely on foreign loans and shareholders. The lack of capital and the need to attract foreign funds resulted in a high level of interest rates, which prevailed throughout the 1920s, and made profitable investments almost impossible.[38]

Hyperinflation, thus, accelerated the rate of depreciation of capital and liquid reserves held by businesses and banks forcing them to adjust rapidly to the new conditions. Both sectors lost precious time and by the time of stabilization faced a narrowed horizon of alternatives. Certainly both banks and businesses suffered from hyperinflation through the loss of capital, but it was the speed at which this transformation occurred, which made it so difficult to grapple with. Through destroying the capital base of banks and businesses so rapidly, hyperinflation had eliminated options of modernization, gradual adjustment, and structural transformation. It left businesses and banks with little choice but to obtain fresh capital abroad at high rates that stifled the economy throughout the 1920s and made both banks and industry dangerously dependent on foreign loans.

The accelerated pace of inflation and depreciation during hyperinflation destroyed viable alternatives. It curtailed the horizon of available options to Austrian citizens, businesses and banks. It did so by functioning as a catalyst of transition, speeding up the transformative process, accelerating its dynamics. By increasing the pace of transformation, it eliminated realistic alternatives and thus was formative in a path-dependent way.

It is difficult to identify the path-determining effects hyperinflation had on an individual level. The eradication of savings and of fixed-income assets (cash, deposits

[38] Hans Kernbauer and Fritz Weber, "Die Wiener Grossbanken in der Zeit der Kriegs- und Nachkriegsinflation" in Gerald D. Feldman (ed.), *Die Erfahrung der Inflation im internationalen Zusammenhang und Vergleich* (Berlin 1984), pp. 142-87. Fritz Weber, "Zusammenbruch, Inflation und Hyperinflation", p. 28.

and bonds) meant the pauperization of Austria's middle-class, an effect commonly noted as a main cause for Austria's subsequent political polarization.[39] But in line of this paper's argument, we are more interested in the immediate transformations brought about by accelerated dynamics during hyperinflation. The famous study by Austrian sociologists on the Austrian village of Marienthal during the Great Depression concluded that long-term unemployed experienced a distorted sense of time.[40] Unemployed women who were able to fill their day with the purposes of child-rearing and house-work showed no distorted sense of time, but unemployed men, suffering from idleness and hopelessness experienced time go by slower.

One might thus expect that during times of hyperinflation, when people *rush* to spend the their money, when everything is accelerated, the subjective experience of time is faster, too. A possibly useful glimpse into people's individual behavior during hyperinflation is provided by the statistics of the Austrian Tobacco monopoly. Its revenue figures allow us to estimate the amount of tobacco bought by consumers during the period of hyperinflation. Prices of tobacco products in Austria were fixed by law and thus often lagged behind inflation. As nominal prices rose, the real price of tobacco products fell significantly until, eventually, a law would be passed to adjust the price of tobacco.[41] The amount of tobacco purchased each month fluctuated. Before price hikes, when tobacco was generally cheap, it was bought in

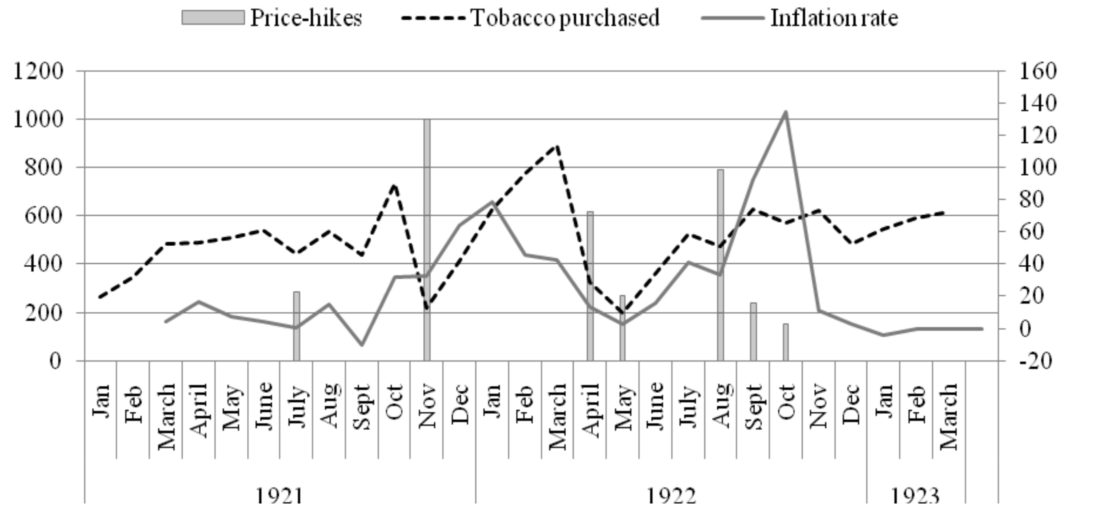
[39] See e.g. Kernbauer, *Währungspolitik*, p. 48-9. Fritz Weber, "Zusammenbruch, Inflation und Hyperinflation", pp. 28-9. Bachinger and Matis, "Inflation in Austria after World War I (1918-1922)" pp. 322-3. But also Otto Bauer, *Die österreichische Revolution* (Vienna 1923).

[40] Maria Jahoda, Paul Lazarsfeld and Hans Zeisel, *Die Arbeitslosen von Marienthal. Ein soziographischer Versuch über die Wirkungen langdauernder Arbeitslosigkeit* (Frankfurt a. M. 1975), pp. 83-92.

[41] This was also true for transportation on Vienna's municipal tramway. It would be interesting to contrast the tobacco data with revenue from ticket-fare sales.

large amounts, while after price-hikes the amount of tobacco sold expectedly fell (*Graph 2*).[42]

*Graph 2:* Monthly rates of inflation and estimated tobacco purchases: 1921-1923.




*Source*: *SdN, C 13 Reconstruction financière de l'Autriche 1922 – 1926*: « Statements Monthly Gross Receipts Tobacco » *and* « Annexe I. Gages Affectés aux Emprunts Autrichien, Dépenses et Recettes du Monopole des Tabacs en 1921-1922-1923 (Rendement net.) ». Tobacco purchases are given as a relative figure: January 1921 = 262. Price adjustments are shown relative to the largest one of November 1921, which was 258%. Information on the adjustments was gathered from the relevant issues of the Austrian *Bundesgesetzblatt*.

Hyperinflation caused the real price of tobacco products to fall and people bought more cigarettes and cigars because of their abnormally low price and in anticipation of expected price hikes. After price adjustments, purchases of cigarettes and cigars fell below normal levels and consumers probably also consumed stocks they had amassed previously. Purchases of tobacco products thus peaked during hyperinflation in October 1921, fell after the price adjustment in November, and continued to rise as high rates of inflation persisted. When the second wave of hyperinflation ensued in June 1922, sales in tobacco increased once more as the real price of tobacco products

[42] People were sensitive to the changes in tobacco prices. The *NFP* published a report on November 9th that rumors about an increase in tobacco prices were not accurate and reported on the 20th of October that tobacco prices would be increased by 25 to 30% within two days. *NFP*, Morgenblatt, 9/11/1922: "Keine Erhöhung der Preise für Rauchmaterialien." *NFP*, Morgenblatt, 20/10/1922: "Neuerliche Erhöhung der Rauchwarenpreise." Another article in the *NFP* observed that in the middle-class districts, consumption of higher quality products had fallen while in working class neighborhoods expensive tobaccos were being consumed, and noted that the number of female smokers had increased, too. *NFP*, Nachmittagsblatt, 23/10/1922: "Die Erhöhung der Rauchwarenpreise."

fell abruptly. Price adjustments in August, September and October were not enough to bring tobacco prices up to a realistic level.

Whereas habits of unemployed during the great depression might have reflected a subjective slowing down of time, the opposite was probably true for people during hyperinflation. The accelerated dynamics, the haste of running to exchange or spend one's money, went hand-in-hand with a larger and probably quickened tobacco consumption. Even if some were horded or bartered, the larger volume of acquired cigarettes would have resulted in more of them being smoked on an individual level, more hastily, more often and over a shorter period of time. The accelerated dynamics of transition during hyperinflation hastened the pace of life for individuals down to the experience of smoking a cigarette.

* * *

Since Antiquity historians have studied the invariable transition of society from one set of institutions to another. Plato outlined the decline of society as it moves from Aristocracy through Democracy towards Tyranny in his *Republic*. Each transition is coupled with transformation, with changes to the way society is ruled, governed, organized. It is, however, entirely modern when such transitions are coupled with a collapse that leads to hyperinflation. Only in modern society does the collapse of fiscal stability incur the complete loss of savings and capital. More importantly, perhaps, only in modern society does hyperinflation speed up the transitional dynamics and thereby eliminate important alternate outcomes.

For scholars studying transition and transformation this insight should be of interest. Transitions are always crucial and important points in time and societies better get them right. The danger of financial instability during transitions is common place and often unavoidable. In some cases, such as the Bolshevik revolution, hyperinflation might even be welcomed as the great debaucher of society, but generally it shouldn't. Moreover, as this paper argued, hyperinflation is not just a cause or consequence of transition, but it itself impacts transition in important ways. Through accelerating the dynamics of every-day life, from the realm of high politics to the subjective experience of time, from the activities of small businesses to that of mighty banks, it demands a hastened process of decision making, eliminating alternatives and options, which otherwise might have been chosen. By the time hyperinflation is terminated and prices, wages and the exchange-rate are stabilized, society, the economy and the individual face a limited set of options. Hyperinflation by then has had a path-determining character, channeling the future lying ahead even long after it has disappeared.