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Recovery, Rearmament, and Ruin: Macroeconomic Sustainability in the Third Reich, 1932-1945

Toparlanma, Yeniden Silahlanma ve Çöküş: Üçüncü Reich'ta Makroekonomik Sürdürülebilirlik, 1932-1945

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Bu makale, Üçüncü Reich ekonomisini makroekonomik sürdürülebilirlik perspektifinden yeniden incelemektedir. Çalışma, yalnızca Nazi Almanyası'nın 1930'ların başındaki kriz koşullarından çıkıp çıkmadığını değil, bu toparlanmanın barış döneminde kendini yeniden üretebilecek bir büyüme rejimi yaratıp yaratmadığını da sorgulamaktadır. Makroekonomik-tarihsel bir çerçeveye ve 1932-1945 dönemini kapsayan yıllık bir veri setine dayanan çalışma, savaş öncesi döneme ait kompakt tahminleri savaş dönemi devam çerçevesiyle birleştirerek büyümenin bileşimi, sivil denge ve dış kısıt boyutlarını incelemektedir. Bulgular, toparlanmanın gerçek olduğunu, ancak giderek yeniden silahlanmaya, kamusal emilime, stratejik ticaret yönetimine ve özel tüketimin baskılanmasına bağımlı hale geldiğini göstermektedir. Yatırım ve kamu alımlarındaki artış, özel tüketim payındaki gerilemeyle ilişkilidir; bu da daha az sürdürülebilir bir kaynak tahsis yapısına işaret etmektedir. Bu çerçevede savaş, uygulanabilir bir modelin kesintiye uğraması değil, çözülmemiş kısıtların aşılması aracı olarak görünmektedir.

ABSTRACT

This paper re-examines the Third Reich economy through the lens of macroeconomic sustainability. Rather than asking whether Nazi Germany recovered from the crisis of the early 1930s, it asks whether that recovery generated a peacetime growth regime capable of self-reproduction. Using a macroeconomic-historical framework and an annual dataset for 1932-1945, the paper combines compact prewar estimations with a wartime continuation framework to examine growth composition, civilian balance, and external constraint. The findings indicate that the recovery was real, but increasingly dependent on rearmament, public absorption, strategic trade management, and the compression of private consumption. Rising investment and public purchases were associated with a declining private-consumption share, indicating a less sustainable allocation structure. War thus appears not as an interruption of a viable model, but as a means of overriding constraints.

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1. Introduction

Few propositions in twentieth-century economic history are as superficially plausible, and as analytically inadequate, as the claim that Hitler's economy "worked until the war." It is plausible because the Third Reich did preside over a striking recovery from the catastrophic conditions of the early 1930s. Output rose, unemployment collapsed, and the visual contrast with the nadir of the Weimar crisis was dramatic. Yet it is inadequate because it confuses short-run recovery with macroeconomic viability. An economy can revive powerfully from a deep contraction and still do so in a form that is increasingly unbalanced, increasingly constrained, and ultimately unsustainable. That distinction lies at the center of this paper.

The economy of the Third Reich remains one of the most contested cases in modern macroeconomic history precisely because it sits at the intersection of recovery, coercion, rearmament, and war. Earlier interpretations often leaned either toward a narrative of extraordinary economic success or toward the opposite claim that the regime's performance was largely illusory. More recent scholarship has made that dichotomy harder to sustain. Measurement problems in German output data, the changing expenditure structure of the 1930s economy, the growing weight of armaments, and the tightening role of foreign-exchange and raw-material constraints all suggest that the relevant question is not whether recovery occurred, but what kind of recovery it was and under what conditions it could continue (Fremdling & Stäglin, 2014, 2020; Overly, 1994; Ritschl, 2004; Tooze, 2008). Once framed in those terms, the issue becomes one of macroeconomic sustainability rather than headline performance alone.

This paper re-examines the Third Reich through that lens. Its central question is whether Nazi Germany generated a growth regime capable of reproducing itself under peacetime conditions, or whether the apparent success of the early recovery concealed a progressively less balanced and less sustainable macroeconomic structure. The argument advanced here is that the regime achieved a genuine short-run recovery, but that the composition of expansion changed in ways that made continued peacetime growth increasingly difficult. As the decade progressed, growth became more tightly bound to rearmament, public absorption, strategic trade management, and the compression of civilian balance. In that sense, war is not treated here merely as an external interruption of an otherwise viable system. It is interpreted as the mechanism through which the constraints of that system were overridden rather than resolved (Kindleberger, 1989; Tooze, 2008; Tooze & Martin, 2015).

The contribution of the paper is both substantive and methodological. Substantively, it shifts the debate away from the blunt question of whether the Nazi economy "worked" and toward the more analytically meaningful question of how long, in what form, and under what constraints it could function without war. Methodologically, it combines a macroeconomic-historical framework with a structured annual dataset that distinguishes between a dense prewar estimation window and a thinner wartime continuation. This matters because the empirical problem is not simply one of incomplete data. It is also one of

comparability. The categories through which peacetime recovery can be assessed are not identical to those through which wartime coercive mobilization can be interpreted. A credible empirical design must therefore respect the historical break between these regimes rather than blur them into a single pooled narrative or a mechanically unified time series (Ritschl, 2004; Temin, 1991).

To address this problem, the paper treats the economic history of the Third Reich as a three-regime sequence. The first regime, 1932-1935, captures recovery and stabilization. The second, 1936-1938, captures the transition to constrained rearmament and increasingly directed expansion. The third, 1939-1945, captures war, coercive mobilization, and collapse. This structure allows the paper to separate the undeniable reality of early recovery from the increasingly strained character of the later prewar economy and from the radically altered logic of wartime continuation. It also makes possible a limited but useful bridge to neo-mercantilism by highlighting the growing role of bilateral clearing, foreign-exchange conservation, strategic import management, and the attempt to organize an externally subordinated economic space around state priorities (Barkai, 1990; Kindleberger, 1989).

Empirically, the paper draws on annual fiscal, national-account, trade, employment, and monetary series reconstructed in the historical literature and supplements them with the Maddison Project Database 2023 for the wartime macro backbone. The formal estimations are confined to the prewar sample, where the structure of the data is strongest, and focus on three dimensions of sustainability: growth composition, civilian balance, and external constraint. The wartime period is then treated as an extension whose meaning is interpreted through normalized continuation indicators and the broader macroeconomic-historical record. This strategy does not promise more precision than the data can bear. Instead, it seeks to align the empirical design with the actual historical structure of the evidence (Bolt & van Zanden, 2024, 2025; Fremdling & Stäglin, 2020; Ritschl, 2002).

The paper proceeds as follows. Section 2 reviews the main literature on Nazi macroeconomic performance, measurement, rearmament, planning, and external constraint. Section 3 sets out the historical and analytical framework and explains the logic of the three-regime design. Section 4 describes the dataset and variable construction. Section 5 traces the macroeconomic evolution of the regime across recovery, rearmament, and war. Section 6 presents the empirical strategy. Section 7 reports the results, and Section 8 discusses their implications. Section 9 concludes.

2. Literature Review

The economic history of the Third Reich has generated one of the most persistent debates in twentieth-century macroeconomic history. At one pole stands the enduring claim that the Nazi regime delivered an impressive economic recovery from the crisis conditions of the early 1930s. At the other stands the argument that this apparent success has often been overstated, mismeasured, or misunderstood because the underlying structure of expansion was progressively shaped by rearmament,

external constraint, coercive allocation, and eventually war. For the purposes of this paper, the central issue is not whether recovery occurred at all. It clearly did. The more important question is whether that recovery constituted a macroeconomic path capable of reproducing itself under peacetime conditions, or whether it rested on a configuration of expenditure, trade management, and state prioritization that was ultimately unsustainable.

A first strand of the literature concerns measurement itself. Any serious macroeconomic evaluation of the Third Reich must begin with caution about the underlying output data. Ritschl (2004) showed that part of the apparent strength of German growth in the interwar period may reflect serious measurement problems, especially in the construction and interpretation of output indices. That critique matters directly for the present paper because it shifts attention away from headline growth alone and toward the structure and composition of that growth. If the aggregate performance of the period is sensitive to data construction, then it becomes even more important to examine expenditure shares, investment patterns, public absorption, external balances, and the distinction between peacetime and wartime economic categories. In this respect, the literature does not merely warn against overconfidence in the data. It also encourages a more disaggregated macroeconomic reading of the regime's trajectory (Ritschl, 2004).

A second strand focuses on the composition and organization of recovery. Recent work by Fremdling and Stäglin has been especially important because it moves beyond broad narrative claims and reconstructs the internal macroeconomic structure of the German economy in the 1930s. Their 1936 input-output reconstruction provides a benchmark for production, income, and expenditure at a moment when the regime had already shifted decisively toward rearmament. Their subsequent analysis of work creation, rearmament, and private and public investment shows that the employment and production gains of the 1933-1938 period cannot be treated as a simple story of generalized prosperity. Rather, they were associated with a changing allocation structure in which state priorities and armament demand played an increasingly central role (Fremdling & Stäglin, 2014, 2020). This line of research resonates with earlier work by Overy (1994), who emphasized that the Nazi economy cannot be understood through aggregate recovery alone, but must instead be interpreted through the tension between rapid rearmament, limited civilian resources, and the changing economic logic of the regime.

A third strand addresses the broader institutional and doctrinal character of Nazi economic organization. Barkai (1990) remains important here because he shows that Nazi economic policy cannot be reduced either to coherent classical doctrine or to pure opportunistic improvisation. Instead, ideological goals, strategic priorities, and institutional experimentation interacted in ways that produced an unstable but highly interventionist policy structure. Temin (1991), in turn, placed Nazi economic planning in a wider comparative framework by emphasizing the role of fixed prices, coercion, and administrative coordination. His comparison with Soviet planning is valuable not because the two systems were identical, but

because it highlights the extent to which Nazi Germany moved away from ordinary market adjustment and toward politically structured allocation. For the present paper, these studies are useful because they help explain why the late-1930s economy should not be viewed simply as a successful market recovery with some military spending attached. They point instead toward a system whose expansion increasingly depended on directed allocation and administratively managed adjustment (Barkai, 1990; Temin, 1991).

A fourth strand addresses the strategic and external logic of Nazi economic development. Tooze's account remains foundational because it rejects the simple image of a self-contained economic miracle and instead emphasizes the severe resource, foreign-exchange, and strategic constraints under which the regime operated. In that interpretation, the German economy did not move from peaceful prosperity to war because an otherwise successful model was suddenly derailed by political aggression from outside the economic sphere. Rather, the expansion of the late 1930s was already shaped by hard limits, especially in raw materials, foreign exchange, and the capacity to sustain rearmament within a normal peacetime framework. Tooze and Martin extend this argument into the wartime setting by situating the war economy within a broader history of total mobilization, resource competition, and the economic logic of conflict. For the present study, this literature is essential because it suggests that the macroeconomic meaning of war is not merely exogenous interruption. It may instead represent the coercive continuation of a growth model that was becoming increasingly difficult to sustain on peacetime terms (Tooze, 2008; Tooze & Martin, 2015).

A fifth strand, which is less central but still analytically useful, concerns interwar trade policy, bilateralism, and the international environment of constrained adjustment. Kindleberger's treatment of commercial policy between the wars provides a broader context within which the German case can be interpreted. The significance of this literature for the present paper lies in its ability to illuminate the external dimension of sustainability. Bilateral clearing, trade control, and foreign-exchange conservation were not merely administrative curiosities. They were central to the way in which interwar regimes attempted to manage external constraint. For Nazi Germany, these practices are especially important because they connect the domestic composition of growth to the organization of trade and payments beyond the national economy. This is why the paper draws a limited bridge to neo-mercantilism. The purpose is not to collapse the Third Reich into a generic mercantilist type. It is to highlight how state-directed trade and the management of external scarcity formed part of the macroeconomic architecture of late-1930s expansion (Kindleberger, 1989).

Finally, the historiography on domestic pressures and regime dynamics also matters for how the transition from recovery to war is interpreted. Mason (1995) remains important because he foregrounded the possibility that domestic tensions and internal contradictions within the Nazi system influenced the regime's movement toward external expansion. The present paper does not adopt Mason's framework in full, nor does it reduce war to a

single domestic mechanism. However, his work is useful because it reinforces the idea that internal macroeconomic strain and external aggression cannot be cleanly separated. That insight is consistent with the paper's central concern, namely whether the apparent success of the early recovery concealed a progressively less balanced and less sustainable macroeconomic structure (Mason, 1995).

Taken together, these literatures suggest that the main unresolved issue is not whether the Nazi economy experienced recovery, but how that recovery should be interpreted. The existing scholarship gives strong reasons to reject both extremes, the simplistic "economic miracle" view and the equally simplistic claim that all apparent recovery was illusory. What remains analytically underdeveloped is a framework that brings these debates together under a single macroeconomic question: whether the Third Reich generated a growth regime that was sustainable under peacetime conditions. That gap motivates the present paper. It does not seek to deny the reality of short-run recovery. Nor does it treat wartime mobilization as evidence that the underlying system had solved its earlier constraints. Instead, it asks whether the trajectory from recovery to rearmament and then to war can be understood as a sequence in which the apparent success of the early years concealed a progressively less balanced and less sustainable macroeconomic structure.

This framing also explains the empirical choices that follow. Because the literature points simultaneously to measurement problems, composition effects, institutional redirection, and external constraint, the paper cannot rely on a single headline output series or a single narrative turning point. It requires a design that is historically segmented, structurally attentive, and explicit about the limits of comparability between the prewar and wartime years. The next section provides that framework by setting out the paper's analytical logic and explaining why the economy of the Third Reich is best read as a three-regime macroeconomic sequence.

3. Historical and Analytical Framework

The analytical framework of the paper begins from a simple but demanding proposition. A macroeconomic recovery should not be assessed solely by the speed with which output and employment rise from a crisis trough. It must also be assessed by the structure through which expansion is achieved and by the conditions under which that structure can continue. In the context of the Third Reich, this means that the key issue is not merely whether the regime reduced unemployment and revived activity after 1932. It is whether the resulting growth configuration could have been reproduced under peacetime conditions without increasingly heavy reliance on rearmament, state-directed allocation, external management, and eventually coercion.

On that basis, the paper treats the economic history of the Third Reich as a three-regime sequence. The first regime, 1932-1935, is the period of recovery and stabilization. This is the phase in which the strongest case can be made for a genuine turnaround in macroeconomic performance. The second regime, 1936-1938, is the period in which recovery becomes increasingly entangled with rearmament, investment reallocation, public absorption, and external

constraint. The third regime, 1939-1945, is the period in which war transforms the operating logic of the economy and makes ordinary peacetime concepts of macroeconomic sustainability progressively less adequate. This periodization is not merely chronological. It reflects a substantive hypothesis about structural transition, namely that the economy moved from recovery into a more constrained and militarized mode of expansion before crossing into a wartime system sustained by fundamentally altered mechanisms.

This framework matters because it changes the way the central question is posed. The familiar formulation, whether Hitler's economy "worked until the war," is inadequate because it conflates short-run stabilization with long-run viability. An economy can recover and still be unsustainable. Indeed, that is precisely the possibility the paper investigates. In the present framework, "worked" cannot mean only that unemployment fell or that output rose. It must mean that the economy could continue to expand under ordinary peacetime conditions without systematically crowding civilian absorption, tightening external constraint, or requiring progressively more aggressive forms of state management. Once the question is formulated in this way, the issue becomes one of macroeconomic sustainability rather than propaganda, ideology, or retrospective moral judgment.

The framework therefore rests on three analytical pillars. The first is growth composition. A recovery driven increasingly by investment linked to rearmament and by expanding public purchases is not equivalent to a recovery characterized by balanced civilian demand. The second is civilian balance. If the private-consumption share of national output comes under growing pressure as expansion matures, this is a sign that the economy's internal allocation is becoming less consistent with peacetime welfare reproduction. The third is external sustainability. If rapid expansion depends increasingly on strategic trade management, bilateral clearing, and the conservation of scarce foreign exchange, then the balance-of-payments dimension becomes central to the viability of the growth model. These three pillars, growth composition, civilian balance, and external sustainability, define the analytical architecture of the empirical sections that follow.

This is also the point at which the paper's limited bridge to neo-mercantilism becomes analytically useful. The argument is not that the Third Reich can be reduced to a textbook mercantilist system. Nor does the paper claim conceptual identity between early modern mercantilism and a twentieth-century militarized dictatorship. The bridge is narrower and more precise. It highlights the extent to which the late-1930s German economy relied on state-directed trade, strategic import management, foreign-exchange conservation, and bilateral economic ordering in ways that made the external side of the macroeconomy increasingly managed rather than market-adjusting. In that sense, the framework connects domestic allocation pressures to a wider external regime in which growth was sustained not by ordinary multilateral adjustment but by administrative control and geopolitical hierarchy (Kindleberger, 1989; Tooze, 2008).

At the same time, the framework places clear limits on what

the empirical analysis claims to do. The paper does not attempt to estimate a fully structural macroeconomic model of Nazi Germany. The surviving annual data are too short and too uneven across regimes for that. Nor does it attempt to treat wartime output as directly comparable to prewar national welfare. Instead, the framework is explicitly macroeconomic-historical. It uses the strongest observed prewar annual structure for formal estimation and then treats the wartime period as an extension whose meaning must be interpreted through normalized continuation indicators and historical evidence. This design follows naturally from the literature itself. The measurement cautions emphasized by Ritschl, the structural reconstructions by Fremdling and Stäglich, the comparative planning insight in Temin, the doctrinal and institutional analysis in Barkai, and the strategic-constraint interpretation developed by Tooze all point toward a segmented and historically disciplined empirical strategy rather than a single pooled model over 1932-1945 (Barkai, 1990; Fremdling & Stäglich, 2014, 2020; Ritschl, 2004; Temin, 1991; Tooze, 2008).

The contribution of this framework is therefore twofold. First, it provides a way to reconcile the undeniable reality of early recovery with the equally important evidence of mounting structural strain. Second, it turns the debate away from a blunt success-versus-failure dichotomy and toward a more analytically useful question: how long, in what form, and under what constraints could the Nazi growth regime continue to function without war. Framed in this way, the move from recovery to rearmament and then to war is not interpreted as a sequence of unrelated episodes. It is interpreted as a connected macroeconomic trajectory.

This logic leads directly to the data section. Once the paper has established the historical sequence and the analytical criteria by which sustainability will be assessed, the next step is to show exactly what can be observed in the historical record, how the variables are constructed, and why the dense prewar sample and thinner wartime continuation must be treated differently in the empirical analysis.

4. Data and Variables

This study assembles an annual macroeconomic panel for Germany covering 1932-1945, but the density and comparability of the available series vary substantially across subperiods. The empirical core is built from Albrecht Ritschl's historical appendices on interwar Germany, which provide annual public-finance, national-account, trade, price, employment, and monetary series. More specifically, Ritschl's Appendix Tables A and B provide fiscal and national-account material through 1938, Ritschl's Appendix C.1 provides corrected quarterly employment series through 1938, and Ritschl's Appendix D provides revised annual monetary aggregates and their components through 1943 (Ritschl, 2002). To preserve a wartime macro backbone after the termination of the annual national-account series, the dataset is complemented with the Maddison Project Database 2023. Annual population, GDP per capita, and total GDP series for Germany are drawn from that release, with both the dataset itself and its accompanying methodological article cited as source references (Bolt & van Zanden, 2024, 2025). This combination yields a dataset

that is sufficiently rich for formal prewar sustainability analysis and sufficiently broad for a disciplined wartime extension (Bolt & van Zanden, 2025; Ritschl, 2002).

The structure of the dataset follows the macroeconomic logic of the paper. The first block contains output, expenditure, and allocation variables, including nominal and real GNP, real NNP at market prices, private consumption, public consumption, gross fixed investment, enterprise investment, state investment, exports, imports, the trade balance, the current account, public purchases, public investment, public consumption, direct taxes, indirect taxes, and the public-sector financing balance. The second block contains labor-market and monetary indicators, including corrected employment and hours-adjusted employment, the monetary base, M1, M2, the currency-deposit ratio, and the relevant money multipliers. The third block contains the Maddison backbone variables, namely population, GDP per capita, and total GDP, together with continuation indicators derived from them where relevant. Since the full national-account structure ends in 1938, while the monetary variables continue to 1943 and the Maddison backbone continues to 1945, the empirical strategy explicitly distinguishes the dense prewar macro structure from the thinner wartime continuation. This distinction is not a defect of the design. It reflects the structure of the surviving evidence and is preferable to forcing false comparability between peacetime and wartime macroeconomic categories (Bolt & van Zanden, 2025; Ritschl, 2004).

After 1938, the evidentiary structure changes materially. The dense annual national-account architecture available for the prewar economy no longer continues in a directly comparable form, while the wartime years increasingly reflect altered territorial, allocative, and coercive conditions. For that reason, the paper does not treat 1939-1945 as a simple extension of the same peacetime macroeconomic dataset. Instead, it uses the prewar years for the formal sustainability estimations and treats the wartime period as a continuation regime interpreted through surviving monetary and Maddison backbone series. This distinction is central to the empirical design because it preserves comparability where it is strongest and avoids imposing a false symmetry between prewar and wartime macroeconomic categories.

The baseline output variable in the formal prewar estimations is real GNP in billions of 1913 Reichsmarks. For the wartime extension, where the annual national-account series no longer continue, the analysis relies on the Maddison GDP-per-capita and total-GDP backbone together with the surviving monetary series. This distinction is deliberate. The prewar estimations are designed to examine the composition and sustainability of recovery under reasonably standard macroeconomic categories. The wartime section, by contrast, asks whether the late-1930s growth model was continued by altered and increasingly coercive mechanisms rather than whether wartime national accounting can be treated as directly comparable to peacetime welfare or balanced growth. Following standard historical national-account practice, share variables are defined relative to nominal GNP when nominal components are used, and growth rates are reported as annual percentage

changes (Fremdling, 1995; Fremdling & Stäglin, 2014).

The regime structure is imposed ex ante on historical and macroeconomic grounds. This periodization is guided by the macroeconomic-historical literature on recovery, rearmament, and wartime transformation in Nazi Germany, especially the measurement and output cautions emphasized by Ritschl (2004), the structural reconstructions of Fremdling and Stäglin (2014, 2020), and the broader resource-constraint and war-economy interpretation developed by Tooze (2008) and Tooze and Martin (2015). Regime I, 1932-1935, captures recovery and stabilization. Regime II, 1936-1938, captures rearmament under tightening external and resource constraints. Regime III, 1939-1945, captures war, coercive mobilization, and collapse. In a longer sample, one could rely more heavily on formal break-detection procedures in the spirit of Bai and Perron (1998, 2003). Here, however, the dense annual sample is too short to allow algorithmic break methods to bear the burden of identification. Accordingly, the paper uses historically anchored regime dummies, regime mean

comparisons, and parsimonious prewar regressions. This is the appropriate econometric response to a short but historically meaningful macroeconomic panel. For coding purposes in the dataset, the regime variable is defined as 1 = recovery and stabilization, 2 = rearmament under tightening constraint, and 3 = war, coercive mobilization, and collapse.

The dense annual estimation window is necessarily short, which limits the scope for more elaborate time-series modeling and reinforces the need for parsimonious specifications in the empirical analysis.

The descriptive properties of the formal estimation sample are reported in Table 1, while regime-specific macroeconomic averages are summarized in Table 2.

To make the sample structure fully transparent, the descriptive statistics for the formal estimation window are reported first. Table 1 presents the prewar descriptive statistics for the annual estimation sample, 1932-1938.

Table 1. Descriptive statistics for the prewar annual estimation sample, 1932-1938

Variable	N	Mean	SD	Min	Max
Real GNP growth (%)	6	10.337	1.872	7.395	12.084
Investment share of nominal GNP (%)	7	14.334	4.631	7.607	19.246
Public purchases share of nominal GNP (%)	7	20.981	5.465	13.656	30.488
Private consumption share of nominal GNP (%)	7	68.986	8.519	57.048	82.695
Current account share of nominal GNP (%)	7	0.029	0.578	-0.838	0.777
Monetary base growth (%)	6	12.116	14.191	0.948	40.058

Notes: This table reports descriptive statistics for the formal prewar estimation sample used in the regression analysis. The sample is restricted to 1932-1938 because the dense annual national-account structure drawn from Ritschl's historical appendices ends in 1938. Variables are defined in Appendix Table A1. Share variables are expressed relative to nominal GNP, and growth variables are reported in annual percentage terms where applicable. Because the sample is small, the table is intended to document the empirical structure of the estimation window rather than to support distributional inference. **Sources:** Author's calculations based on Ritschl's Appendix Tables A and B, Ritschl's Appendix C.1, and Ritschl's Appendix D (Ritschl, 2002), compiled in the annual panel dataset.

The historical regime structure is then summarized directly. Table 2 reports regime means for the key macroeconomic variables across the three-tier structure, including output indicators, allocation shares, external-balance indicators,

and continuation variables where available.

Table 2. Regime means across the three-tier macroeconomic structure

Variable	Regime I (1932-1935)	Regime II (1936-1938)	Regime III (1939-1945)	Coverage note
Real GNP growth (%)	10.250	10.423		R1:n=3, R2:n=3, R3:n=0
Hours-adjusted employment growth (%)	8.447	8.796	0.525	R1:n=3, R2:n=3, R3:n=1
Investment share of nominal GNP (%)	11.402	18.244		R1:n=4, R2:n=3, R3:n=0
Public purchases share of nominal GNP (%)	17.860	25.141		R1:n=4, R2:n=3, R3:n=0
Private consumption share of nominal GNP (%)	74.306	61.891		R1:n=4, R2:n=3, R3:n=0
Current account share of nominal GNP (%)	-0.073	0.165		R1:n=4, R2:n=3, R3:n=0
Monetary base growth (%)	3.972	20.260	28.997	R1:n=3, R2:n=3, R3:n=5
M1 growth (%)	2.380	14.067	26.322	R1:n=3, R2:n=3, R3:n=5
GDP per capita growth (%)	7.017	6.629	-0.785	R1:n=3, R2:n=3, R3:n=7

Notes: This table reports regime-specific means for the paper's three-tier historical structure: Regime I, recovery and stabilization (1932-1935); Regime II, rearmament and tightening constraint (1936-1938); and Regime III, war economy, coercion, and ruin (1939-1945). Because source coverage differs across variables, the regime means are calculated using all available observations for each variable within each regime and do not imply a fully balanced panel across all indicators. Prewar national-account variables are available through 1938, selected monetary series

through 1943, and Maddison backbone variables through 1945. The table should therefore be read as a structured descriptive comparison rather than a balanced panel summary.

Sources: Author's calculations based on Ritschl's Appendix Tables A and B, Ritschl's Appendix C.1, and Ritschl's Appendix D (Ritschl, 2002), together with the Maddison Project Database 2023 (Bolt & van Zanden, 2024, 2025).

Because the empirical strategy depends on variable construction and sample coverage, the variable definitions are documented explicitly in the appendix. The main variable definitions, transformations, units, and source provenance are reported in Appendix Table A1. For consistency with the wartime extension developed later in the paper, the normalized continuation indicators are also reported separately in the appendix. Appendix Table A2 presents the wartime continuation indicators for 1939-1945, normalized to 1938 = 100.

This data structure leads directly to the next section. Once the sample is understood in its historically segmented form, the main analytical issue is no longer whether recovery occurred at all, but how the macroeconomic composition of that recovery changed as the regime moved from stabilization to rearmament and finally to wartime coercive continuation.

5. Macroeconomic Evolution across the Three Regimes

The first regime, covering the movement from the trough of 1932 into the mid-1930s, is the phase in which the claim that the Nazi economy "worked" appears most plausible in narrow macroeconomic terms. Output recovered, employment rose sharply, and the expenditure side of national income shifted away from depression conditions. At this level of aggregation, any serious analysis must acknowledge that the recovery was real. Yet the existence of recovery is not the same as the existence of a sustainable growth model. That distinction is central to the paper. The relevant macroeconomic question is not whether activity revived, but whether the structure of expansion was capable of reproducing itself under peacetime conditions without progressively intensifying fiscal-military pressure, external constraint, and administrative control (Fremdling & Stäglin, 2020; Tooze, 2008).

That distinction becomes much clearer in the second regime. From 1936 onward, the macroeconomic profile of expansion increasingly shifted toward public purchases, public investment, and forms of accumulation associated with rearmament rather than balanced civilian prosperity. The 1936 input-output benchmark is particularly important here because it shows that the economy's production and income structure had already become deeply entangled with armaments demand and unusually high operating surpluses in armament-related activity. The issue is not merely that military spending was large. The issue is that the composition of growth was changing in a way that reduced the relevance of ordinary peacetime welfare benchmarks. In macroeconomic terms, the late-1930s economy appears less as a self-sustaining civilian recovery and more as a redirected mobilization economy whose viability depended on continued state prioritization and increasingly selective access to foreign exchange, raw materials, and strategic imports (Fremdling & Stäglin, 2014, 2020).

The external side of the story reinforces this interpretation. The late-1930s German economy cannot be understood adequately through domestic aggregates alone. The current account, import dependence, bilateral clearing, and trade management all belong inside the macroeconomic narrative because they governed the conditions under which rapid expansion could continue. In this respect, a limited bridge to neo-mercantilism is justified. The point is not that the Third Reich replicated early modern mercantilism. Rather, the point is that its late-1930s macroeconomic order displayed recognizably neo-mercantilist features, namely state-directed trade, strategic import management, foreign-exchange conservation, bilateral clearing, and the attempt to organize an externally subordinate economic space around German priorities. This bridge matters because it ties the sustainability question directly to the balance-of-payments problem and to the regime's growing inability to reconcile rearmament with multilateral openness and normal external adjustment (Kindleberger, 1989; Tooze, 2008).

The wartime regime should therefore not be treated as a simple interruption of an otherwise viable development path. Once war begins, the meaning of growth itself changes. Wartime output and mobilization cannot be interpreted as evidence that the late-1930s model had solved its internal contradictions. Instead, war appears as the mechanism through which those contradictions were overridden, temporarily displaced, or externalized through coercion, conquest, extraction, and radically altered allocation priorities. This is why the macroeconomic history of the Third Reich must be read as a sequence. Recovery did occur. But the route from recovery to rearmament and then to war was not an accidental detour away from a stable peacetime equilibrium. It was the historical path through which the regime attempted to preserve expansion once the limits of the earlier model had become binding (Tooze, 2008; Tooze & Martin, 2015).

The descriptive regime evidence summarized in Table 2 gives this sequence empirical shape. More specifically, Table 2 suggests three broad descriptive shifts. First, the movement from Regime I to Regime II is associated with higher investment and public-purchases shares together with a markedly lower private-consumption share, which is consistent with the paper's central allocation argument. Second, the monetary indicators point to a stronger expansionary and mobilizational environment in the later regime. Third, the continuation variables available for Regime III underline that wartime evidence cannot be read as the simple continuation of a balanced civilian economy. Taken together, these descriptive patterns provide the immediate motivation for the compact estimations reported below. The same logic also motivates the move from narrative comparison to formal estimation. Once the macroeconomic evolution across the three regimes has been established descriptively, the next task is to test whether the late prewar phase exhibited measurable signs of diminishing peacetime sustainability. That is the purpose of the empirical strategy developed in the next section.

6. Empirical Strategy

The empirical analysis is designed to match both the content and the limits of the historical dataset. Since the dense annual macroeconomic series from the Ritschl appendices end in 1938, the formal estimations are confined to the prewar sample. This restriction is not a technical inconvenience but a methodological choice. It avoids imposing false comparability between prewar and wartime national-account categories and keeps the estimation window consistent with the best-observed macroeconomic structure. The formal regression sample therefore covers 1932-1938, while the wartime period is handled separately through indexed continuation indicators and macrohistorical interpretation. In practical terms, the paper uses formal estimation to examine the sustainability of the prewar growth regime and then uses the wartime section to assess whether war resolved or merely displaced the constraints that had emerged by the late 1930s. All reported regressions are estimated by ordinary least squares (OLS) on the prewar annual sample and are presented as compact exploratory specifications rather than as large-sample causal estimates.

The estimation strategy is therefore intentionally parsimonious. With a very short annual sample, the purpose of the regression exercise is not to claim exact causal identification in the modern sense. Rather, it is to evaluate whether the composition of growth became progressively less compatible with a balanced peacetime macroeconomic path. The analysis therefore concentrates on three linked dimensions of sustainability, growth composition, civilian balance, and external constraint. Each dimension is examined through a tightly specified annual equation, and the coefficients are interpreted primarily in terms of sign, magnitude, and consistency with the descriptive evidence rather than through conventional significance testing alone. This approach is consistent with the broader structural-break literature, but it does not rely on algorithmic breakpoint discovery because the sample is too short for those methods to carry the argument by themselves (Bai & Perron, 1998, 2003).

The first specification relates output growth to the composition of expenditure and to the shift into the late prewar regime.

$$\begin{aligned} \Delta \ln(Y_t) = & \alpha + \beta_1 \text{InvShare}_t \\ & + \beta_2 \text{PubPurchShare}_t + \beta_3 \text{CAshare}_t \\ & + \beta_4 \text{MoneyGrowth}_t + \beta_5 D_{2,t} + \varepsilon_t \end{aligned} \quad (1)$$

where Y_t denotes real GNP, InvShare_t is gross fixed investment as a share of nominal GNP, PubPurchShare_t is public purchases as a share of nominal GNP, CAshare_t is the current account as a share of nominal GNP, MoneyGrowth_t is the annual growth rate of the monetary base or M1, and $D_{2,t}$ is a dummy variable equal to one in Regime II and zero otherwise. In the actual estimations, this equation is implemented in compact variants to avoid overfitting. Its purpose is to assess whether the late phase of expansion is associated with a more state-directed and potentially less balanced growth structure.

Equation (1) presents the general output-growth specification. In the reported estimations, however, this general form is implemented through compact variants in

order to preserve degrees of freedom in the very small annual sample. Accordingly, the growth-composition dimension is examined through two alternative output-growth specifications, one centered on the investment share and one centered on public purchases, rather than through a single fully saturated regression.

The second specification evaluates civilian balance by focusing on the private-consumption share of output.

$$\begin{aligned} \text{PrivConsShare}_t = & \alpha + \gamma_1 \text{InvShare}_t \\ & + \gamma_2 \text{PubPurchShare}_t + \gamma_3 D_{2,t} + u_t \end{aligned} \quad (2)$$

where PrivConsShare_t denotes private consumption as a share of nominal GNP. This equation operationalizes the proposition that, as investment and public purchases linked to rearmament expanded, civilian absorption came under pressure. In macroeconomic terms, it distinguishes a recovery that broadens private welfare from a recovery that increasingly reallocates resources away from civilian uses.

The third specification addresses external sustainability directly.

$$\begin{aligned} \text{CAshare}_t = & \alpha + \delta_1 \Delta \ln(Y_t) + \delta_2 \text{InvShare}_t \\ & + \delta_3 \text{PubPurchShare}_t + \delta_4 D_{2,t} + v_t \end{aligned} \quad (3)$$

where CAshare_t again denotes the current account as a share of nominal GNP. This equation tests whether stronger growth, higher investment, and expanding public absorption were associated with greater external strain. In a system operating under tightening foreign-exchange and raw-material constraints, such a relationship would be consistent with the paper's central claim that the late-1930s model was becoming increasingly difficult to sustain under normal peacetime conditions.

Because the paper also extends the analysis into the wartime years through normalized continuation indicators, the wartime indexing rule is defined explicitly as follows.

$$Z_{k,t} = 100 \times \left(\frac{X_{k,t}}{X_{k,1938}} \right), \quad t = 1939, \dots, 1945 \quad (4)$$

where $X_{k,t}$ denotes the available wartime continuation series, most importantly GDP per capita from the Maddison Project Database 2023 and the surviving monetary aggregates from Ritschl's Appendix D (Bolt & van Zanden, 2024, 2025; Ritschl, 2002), and $Z_{k,t}$ expresses each wartime indicator as an index relative to its 1938 prewar level. This normalization allows the paper to compare wartime continuation with the late prewar benchmark without implying unchanged accounting conditions across the two regimes. Equation (4) therefore belongs to the empirical strategy even though it is not a regression equation in the same sense as Equations (1)-(3). It defines the wartime extension that is later reported in Appendix Table A2 and interpreted in the results section.

In the reported estimations, these analytical dimensions are implemented through four compact specifications. The growth-composition dimension is examined through two alternative output-growth equations, one centered on the investment share and one centered on public purchases. The remaining two specifications address civilian balance and external sustainability. This structure preserves interpretability while respecting the very small annual

sample.

Since the dense prewar annual sample is short, the econometric treatment remains deliberately compact. The paper therefore does not estimate over-parameterized dynamic models, nor does it rely on conventional significance testing alone. The preferred interpretation rests on coefficient signs, magnitudes, stability across closely related specifications, and their consistency with the descriptive regime evidence. This small-sample structure is an inherent limitation of the available annual historical record and should be kept in mind when interpreting the regression results. In practice, the share variables are introduced in tightly controlled variants rather than in unnecessarily large joint specifications, and the regime dummy is used to capture the historical shift from recovery to constraint. This approach is fully consistent with the break-model literature in spirit even though the sample is too short for multi-break algorithms to generate decisive independent evidence (Bai & Perron, 1998, 2003).

Because the interpretation of the wartime extension depends on normalized continuation indicators, those indicators are documented separately. Appendix Table A2 reports the wartime continuation indices, normalized to 1938 = 100.

This estimation strategy leads naturally into the results. The formal regressions do not stand alone. They must be read

Table 3. Exploratory prewar OLS estimations, 1932-1938

Variables	Model (1) Output growth	Model (2) Output growth	Model (3) Civilian balance	Model (4) External balance
Investment share of nominal GNP	0.506 (0.338)		-0.859 (0.237)	0.005 (0.099)
Public purchases share of nominal GNP		-0.044 (0.299)	-0.869 (0.201)	
Regime II dummy, $D_{\{2,t\}}$	-2.647 (2.403)	0.430 (2.636)		
Real GNP growth				0.020 (0.205)
Constant	3.845 (4.409)	11.091 (5.923)	99.519 (2.099)	-0.323 (2.009)
Observations	6	6	7	6
R-squared	0.429	0.010	0.985	0.007
Adjusted R-squared	0.048	-0.651	0.977	-0.656

Notes: This table reports exploratory OLS estimations for the prewar annual sample, 1932-1938. Parenthetical values are conventional OLS standard errors. The reported specifications correspond to the paper's three empirical dimensions of sustainability: growth composition, civilian balance, and external constraint. Models (1) and (2) both examine the growth-composition dimension, but they do so through alternative compact specifications rather than a single fully saturated output-growth regression. Model (1) centers on the investment share, whereas Model (2) centers on the public-purchases share. Given the very small annual sample, the estimates are interpreted primarily in terms of coefficient signs, magnitudes, and consistency across closely related specifications rather than through conventional asymptotic inference alone. The results are therefore best understood as structured macroeconomic-historical evidence rather than as precise causal estimates. **Sources:** Author's estimations based on the annual panel dataset constructed from Ritschl's Appendix Tables A and B, Ritschl's Appendix C.1, and Ritschl's Appendix D (Ritschl, 2002).

The regression evidence reported in Table 3 should be read with appropriate caution, but it is nevertheless informative. The output-growth equations are directionally consistent with the view that investment intensity remained positively associated with growth, yet the late-regime dummy is

together with the regime evidence already established above. The next section therefore interprets the statistical results in direct connection with the descriptive macroeconomic transition from recovery to constraint.

7. Results

The descriptive evidence confirms that the Nazi economy achieved a substantial short-run recovery in the first regime. Output growth accelerated sharply after 1932, employment recovered, and fixed investment rose strongly from depression-era lows. At the same time, the regime means reported in Table 2 indicate a marked shift in the composition of the expansion between the early recovery phase and the later rearmament phase. The second-tier years exhibit a higher investment share, stronger monetary expansion, and a macroeconomic profile that is visibly less consistent with balanced civilian growth. This transition is central to the paper's interpretation because it suggests that the issue was not the absence of recovery, but the changing structure of that recovery.

The estimated coefficients corresponding to the compact prewar specifications are reported in Table 3. Table 3 presents the exploratory prewar OLS estimations for the output-growth, civilian-balance, and external-balance equations.

negative in the compact investment-share specification. In substantive terms, this suggests that even if investment continued to support activity, the shift into the rearmament regime did not improve growth quality in a straightforward peacetime sense. The alternative output-growth model

using public purchases instead of investment share is weaker, which is not surprising given the very small annual sample and the fact that public purchases partly proxy a broader structural transition rather than a single marginal stimulus channel. These findings should therefore be interpreted as structural indicators rather than as definitive causal estimates.

The strongest formal result appears in the civilian-balance equation. As reported in Table 3, private consumption as a share of nominal GNP is negatively associated with both the investment share and the public-purchases share. In the estimated model, both coefficients are economically large and statistically strong within the confines of the small sample. This result is important because it provides the clearest quantitative support for the sustainability argument. Economically, the estimated magnitudes imply that increases in investment intensity and public absorption were not merely associated with faster mobilization, but also with a measurable reallocation away from private use. In the logic of the paper, this is precisely what distinguishes a short-run recovery regime from a peacetime growth structure capable of broad civilian reproduction. A recovery path in which rising investment and rising public absorption systematically compress the private-consumption share is

difficult to characterize as a self-sustaining peacetime macroeconomic equilibrium. It is more consistent with a reallocation regime in which the state progressively pre-emptively absorbs civilian absorption.

The external-balance equation is weaker in conventional statistical terms, but the absence of a strong estimated relationship should not be overstated. The annual prewar sample is extremely short, and the external sector in the Third Reich was heavily shaped by administrative controls, bilateral arrangements, and strategic import management. Under such conditions, the lack of a precise reduced-form coefficient does not imply the absence of external constraint. On the contrary, the historical record suggests that the regime's increasing reliance on bilateral clearing, foreign-exchange management, and import prioritization was itself evidence that the external side of the economy had become a binding policy problem (Kindleberger, 1989; Tooze, 2008).

To make the interpretation of the regression coefficients more transparent, Table 4 summarizes the expected signs, estimated signs, and substantive reading of the principal coefficients.

Table 4. Interpretation of the estimated coefficients and expected signs

Equation / model	Variable	Expected sign	Estimated sign	Interpretation
Model (1) Output growth	Investment share of nominal GNP	+	+	Positive association between investment intensity and growth in the prewar sample.
Model (2) Output growth	Public purchases share of nominal GNP	ambiguous / +	-	Weak relationship; public purchases proxy broader structural transition rather than a clean marginal growth channel.
Model (1) Output growth	Regime II dummy, $D_{\{2,t\}}$	-	-	Negative sign suggests weaker growth quality after the shift into the rearmament regime.
Model (3) Civilian balance	Investment share of nominal GNP	-	-	Higher investment share is associated with a lower private-consumption share.
Model (3) Civilian balance	Public purchases share of nominal GNP	-	-	Higher public absorption is associated with a lower private-consumption share.
Model (4) External balance	Real GNP growth	ambiguous / -	+	No strong reduced-form evidence that faster growth improved the current account in the short sample.
Model (4) External balance	Investment share of nominal GNP	-	+	Weak estimated relationship; external constraint is better interpreted jointly with historical evidence.

Notes: This table summarizes the expected signs, observed signs, and substantive macroeconomic interpretation of the principal coefficients reported in Table 3. Models (1) and (2) correspond to alternative compact specifications of the growth-composition dimension, with Model (1) centered on the investment share and Model (2) centered on the public-purchases share. It is included to clarify the analytical role of the estimated relationships in a setting where the sample is short and the historical interpretation of the coefficients is more important than mechanical significance thresholds. The table is interpretive and should be read jointly with the regression results and the descriptive regime evidence. Given the very small annual sample, the entries are intended to clarify substantive meaning rather than to provide an additional layer of statistical inference. **Sources:** Author's interpretation based on Table 3 and the broader macroeconomic-historical framework of the paper.

The wartime continuation indicators reported in Appendix Table A2 reinforce this reading. When the surviving wartime series are normalized to 1938, monetary aggregates continue to expand strongly, while GDP per capita no longer provides a basis for interpreting the system as a balanced peacetime economy. This divergence is exactly what one would expect if war did not solve the sustainability problem but instead

displaced it through coercive mobilization and altered allocation mechanisms. The wartime section therefore should not be read as a separate success story. It is better understood as the continuation of the same macroeconomic sequence under radically different operating conditions.

The results therefore connect directly to the interpretive

question raised at the outset of the paper. The issue is not whether recovery occurred. It is whether the macroeconomic structure of that recovery remained viable without progressively intensifying state allocation, external management, and eventually coercive wartime substitution. The next section takes that step and draws out the broader macroeconomic implications of the results.

8. Discussion

The results refine, rather than simply reject, the familiar claim that Hitler's economy "worked until the war." In a narrow short-run sense, the early recovery was genuine. Output rose, employment improved, and the economy clearly moved away from the depression conditions inherited at the beginning of the period. A serious macroeconomic analysis cannot deny that. But the results also show why that statement is analytically incomplete. The relevant question is not whether the economy recovered, but whether the resulting growth regime could reproduce itself under peacetime conditions without increasingly heavy reliance on state prioritization, rearmament, external management, and the compression of civilian absorption.

On this point, the evidence points in a clear direction. The late prewar economy appears less as a balanced macroeconomic recovery and more as a constrained mobilization regime. The descriptive transition from the first to the second tier, combined with the negative relationship between private-consumption share, investment share, and public purchases reported in Table 3, indicates that the composition of growth was becoming progressively less civilian and less sustainable. This is the macroeconomic core of the paper. The issue was not simply that war arrived and ended a successful system from outside. The issue is that the system itself had moved toward a structure in which continued expansion under peacetime conditions had become increasingly difficult.

This interpretation also clarifies the neo-mercantilist bridge. The value of that comparison does not lie in claiming that the Third Reich reproduced classical mercantilism in any literal sense. Its value lies in highlighting the macroeconomic consequences of strategic trade control, bilateral clearing, foreign-exchange conservation, and the effort to organize an externally subordinate economic space around state priorities. In that respect, the late-1930s Nazi economy displayed recognizably neo-mercantilist features, and those features matter because they are directly connected to the sustainability problem. They show that the regime's growth path was not merely investment-led or fiscally expansionary. It was also increasingly dependent on a managed external order that ordinary multilateral adjustment could no longer sustain.

The wartime extension sharpens the argument further. Once war begins, the system should no longer be evaluated as though it remained a standard macroeconomic equilibrium. Expansion under wartime conditions rested on conquest, coerced labor mobilization, forced reallocation, and extractive control over occupied territories. In that sense, war did not invalidate the sustainability question raised by the late-1930s evidence. It answered it. The continuation of activity required a shift away from peacetime sustainability and toward coercive substitution. The most defensible

macroeconomic conclusion, therefore, is not that the economy worked until the war. It is that the economy worked as a short-run recovery regime, became increasingly strained as a peacetime growth model, and then relied on war as the mechanism through which those strains were overridden rather than resolved.

Taken together, Sections 4 through 8 define a unified empirical strategy and a coherent substantive conclusion. Section 4 established the dataset and its limits. Section 5 showed why the evolution of the macro structure across the three regimes matters more than headline recovery alone. Section 6 translated that historical evolution into a parsimonious set of sustainability equations for the dense prewar sample and a formal indexing rule for the wartime continuation indicators. Section 7 demonstrated that the strongest quantitative support lies in the civilian-balance results, while the weaker external-balance estimates remain fully compatible with the historical evidence on administrative trade control and foreign-exchange constraint. Section 8 has shown why the wartime extension must be interpreted as the coercive continuation of an increasingly constrained model rather than as evidence against the existence of those constraints. In this framework, the statement that "Hitler's economy worked until the war" is analytically incomplete. The stronger macroeconomic interpretation is that the economy worked as a short-run recovery regime, then increasingly depended on rearmament and external management, and finally required war to escape the constraints created by its own mode of expansion (Tooze, 2008; Fremdling & Stäglich, 2020).

These findings lead directly to the paper's central concluding claim regarding the macroeconomic meaning, and the limits, of the apparent success of the Third Reich.

9. Conclusion

This paper re-examined the economy of the Third Reich through the lens of macroeconomic sustainability. Rather than asking only whether the Nazi economy recovered from the crisis conditions of the early 1930s, it asked a more demanding question: whether that recovery generated a growth regime capable of reproducing itself under peacetime conditions. To answer that question, the analysis combined a three-tier macroeconomic-historical framework with a structured annual dataset covering 1932-1945 and a set of parsimonious prewar estimations focused on growth composition, civilian balance, and external constraint.

The results support a qualified but clear conclusion. The early recovery was real. Output and employment recovered markedly from the depression trough, and the first regime does display the features of short-run stabilization. But the evidence also indicates that this recovery evolved into a less balanced and less sustainable macroeconomic structure as the decade progressed. The transition from the first to the second regime was characterized by a growing investment burden, rising public absorption, and an increasingly compressed role for civilian consumption. In this respect, the most important quantitative result of the paper is not simply that expansion continued into the late 1930s, but that the composition of that expansion became progressively less consistent with a self-sustaining peacetime equilibrium. The formal estimations reinforce this interpretation most clearly

in the civilian-balance dimension, where private consumption appears to be systematically crowded by the combined weight of investment and public purchases.

The broader implication is that the statement that Hitler's economy "worked until the war" is analytically incomplete. It is true only in the narrow sense that the regime achieved a visible short-run recovery. It is not sufficient as a macroeconomic interpretation of the late-1930s system. Once the economy is examined in terms of sustainability rather than headline recovery alone, a different picture emerges. The expansion of the Third Reich appears increasingly dependent on rearmament, state-directed allocation, external management, and the suppression of ordinary peacetime adjustment. In that setting, war should not be interpreted merely as an external interruption of a successful model. It is better understood as the mechanism through which the regime attempted to override the constraints created by its own mode of expansion (Tooze, 2008; Tooze & Martin, 2015).

This conclusion also clarifies the limited but useful bridge to neo-mercantilism developed in the paper. The significance of that comparison does not lie in any literal identification of the Nazi economy with classical mercantilism. It lies instead in highlighting the macroeconomic importance of strategic trade control, bilateral clearing, foreign-exchange conservation, and the attempt to structure an externally subordinate economic space around domestic state priorities. These features matter because they connect the internal composition of growth to the external conditions of its continuation. In this sense, the paper's contribution is not merely to note the presence of trade control or bilateral clearing, but to interpret them as macroeconomically consequential responses to a strained growth regime. The neo-mercantilist bridge therefore reinforces the paper's central claim that the sustainability problem of the Third Reich was simultaneously internal and external, embedded in an increasingly managed and constrained external order (Kindleberger, 1989; Tooze, 2008).

At the same time, the paper's conclusions should be read with appropriate discipline. The main limitation of the paper lies in the short annual estimation window available for the formal prewar analysis. The dense annual national-account structure is strongest for the prewar years, and the wartime period necessarily relies on thinner continuation indicators and macrohistorical interpretation rather than fully symmetric formal estimation. That limitation, however, does not weaken the central finding. It strengthens the logic of the design. The break between prewar and wartime evidence is itself part of the argument, because it reflects the transition from a strained peacetime growth regime to a coercive war economy in which ordinary macroeconomic categories became progressively less informative. The paper therefore does not claim that war "proved" the viability of the earlier model. It argues the opposite, that the wartime extension of the system revealed the extent to which continued expansion had come to depend on mechanisms that lay outside any meaningful concept of peacetime macroeconomic sustainability.

Taken together, the analysis suggests that the economy of the Third Reich should be understood neither as a simple success story nor as a case in which apparent recovery can be

dismissed altogether. The more defensible conclusion is narrower and stronger at the same time. The regime achieved a substantial short-run recovery, but the structure of that recovery became increasingly distorted by rearmament, external constraint, and the crowding of civilian absorption. The result was not a durable macroeconomic equilibrium, but a path from recovery to mobilization and from mobilization to war. In that sense, the central contribution of the paper is to shift the debate away from the crude question of whether the Nazi economy "worked" and toward the more analytically meaningful question of how long, in what form, and under what constraints it could continue to function.

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Appendix

Appendix Table A1. Variable definitions, units, transformations, and source provenance

Variable	Unit	Transformation	Coverage	Source
Regime code	categorical	1 = recovery and stabilization (1932-1935); 2 = rearmament under tightening constraint (1936-1938); 3 = war, coercive mobilization, and collapse (1939-1945)	1932-1945	Author's coding
Real GNP	billion 1913 RM	Source series	1925-1938	Ritschl (2002), Appendix Tables A-B
Real GNP growth	percent	Author's calculation: annual percentage change in real GNP	1926-1938	Author's calculation based on Ritschl (2002)
Investment share of nominal GNP	percent	Author's calculation: nominal gross fixed investment / nominal GNP × 100	1925-1938	Author's calculation based on Ritschl (2002)
Public purchases share of nominal GNP	percent	Author's calculation: public purchases / nominal GNP × 100	1925-1938	Author's calculation based on Ritschl (2002)
Private consumption share of nominal GNP	percent	Author's calculation: nominal private consumption / nominal GNP × 100	1925-1938	Author's calculation based on Ritschl (2002)
Current account share of nominal GNP	percent	Author's calculation: current account balance / nominal GNP × 100	1925-1938	Author's calculation based on Ritschl (2002)
Monetary base	million RM	Source series	1924-1943	Ritschl (2002), Appendix D
Monetary base growth	percent	Author's calculation: annual percentage change in the monetary base	1925-1943	Author's calculation based on Ritschl (2002)
M1, wide definition	million RM	Source series	1924-1943	Ritschl (2002), Appendix D
M2, wide definition	million RM	Source series	1924-1943	Ritschl (2002), Appendix D
Hours-adjusted employment growth	percent	Author's calculation: annual percentage change in hours-adjusted employment (1938-hour units)	1926-1938	Author's calculation based on Ritschl (2002), Appendix C.1
Real GDP per capita	2011 international dollars	Source series	1932-1945	Bolt and van Zanden (2024, 2025)
Total real GDP	billion 2011 international dollars	Author's calculation: GDP per capita × population / 1,000,000	1932-1945	Author's calculation based on Bolt and van Zanden (2024, 2025)
Wartime continuation indicator, $Z_{\{k,t\}}$	index, 1938 = 100	Author's calculation: $Z_{\{k,t\}} = 100 \times (X_{\{k,t\}} / X_{\{k,1938\}})$ for wartime continuation series	1939-1945	Author's calculation based on Ritschl (2002), Bolt and van Zanden (2024, 2025)

Notes: This appendix table reports the main variables used in the paper, together with their units, transformations, coverage, and source provenance. It is intended to make the construction of the annual panel fully transparent and to distinguish clearly between source-based variables and author-constructed indicators. Variables derived from multiple sources are identified accordingly.

Sources: Compiled by the author from the data_dictionary sheet of the annual dataset workbook, based on Ritschl (2002), Bolt and van Zanden (2024, 2025).

Appendix Table A2. Wartime continuation indicators, 1938 = 100

Variable	1939	1940	1941	1942	1943	1944	1945
GDP per capita index (1938 = 100)	108.254	108.191	114.359	114.937	117.952	121.834	90.389
Total GDP index (1938 = 100)	109.403	110.206	117.172	118.753	121.140	124.157	88.335
Monetary base index (1938 = 100)	137.357	161.634	216.066	265.087	354.135		
M1 index (1938 = 100)	131.312	173.707	209.692	258.617	320.588		
M2 index (1938 = 100)	127.840	167.445	201.713	260.926	332.145		

Notes: This appendix table reports wartime continuation indicators normalized to 1938 = 100. The table is designed to support the paper's wartime extension without imposing false equivalence between prewar and wartime macroeconomic accounting conditions. Because the continuation indicators are drawn from sources with different terminal years, the appendix is unbalanced by construction. Maddison backbone

variables continue through 1945, whereas the surviving Ritschl monetary series continue through 1943. The appendix should therefore be interpreted as a continuation framework rather than as a balanced wartime panel.

Sources: Author's calculations based on the Maddison Project Database 2023 (Bolt & van Zanden, 2024, 2025) and Ritschl's Appendix D (Ritschl, 2002).