Corporate distress as financial conditions tighten



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Editorial address: Schweizerisches Institut für Aussenwirtschaft und Angewandte Wirtschaftsforschung (SIAW-HSG), Bodanstrasse 8, CH-9000 St Gallen. Tel.: +41 (0)71 224 23 40; http://www.siaw.unisg.ch.

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Statement

The goal of *Aussenwirtschaft* is to publish high quality analyses of important international economic policy matters that affect Switzerland. Given the integration of many Swiss firms and markets into the European and global economy, articles published in this journal may relate to policy initiatives taken in foreign countries as well. Furthermore, reflecting the many forms of cross-border commerce in the twenty-first century, the range of policies considered is not confined to traditional international trade policies. The journal seeks to inform deliberations by decision-makers – political, corporate, employees, as well as civil society – in Switzerland and abroad.

Corporate distress as financial conditions tighten

How fares the "commanding heights" of the Swiss economy? Evidence from the Crux of Capitalism project

Magaly Abboud, Fabio Bernasconi, Sára Czégé, Camilla Erencin, Simon J. Evenett and Felix Reitz

The track record of Swiss publicly listed companies in creating economic value is assessed, along with their propensity to experience corporate distress. This assessment is conducted both in absolute terms and relative to foreign peers for the years 2005 to 2022. Established measures of corporate distress are augmented by a specially constructed economic profits measure assembled from quarterly financial reports. While on average Swiss firms perform better in economic profit terms than rivals from neighboring countries, there are doubts as to whether Swiss firms can generate higher levels of economic profit in the future, especially as the cost of capital is rising.

Comment by Christoph Schaltegger

Zombiefirmen: Ein Schatten über der Wirtschaft

Christoph A. Schaltegger und Laura Zell

Zombieunternehmen werden mittlerweile sowohl in den Medien als auch in der Wissenschaft breit diskutiert. Da sich die meisten Studien vorrangig international mit dem Phänomen auseinandersetzen, fehlt es an detaillierten Analysen für die Schweiz. Das vorliegende Kurzpapier beleuchtet daher gezielt Schweizer Zombieunternehmen anhand von Daten börsennotierter Unternehmen des Crux of Capitalism-Projekts. Entsprechend den internationalen Trends können wir eine zunehmende Zahl von Zombieunternehmen auch in der Schweiz bestätigen und 26 solcher Unternehmen für das Jahr 2022 (13,8% unserer Stichprobe) identifizieren. Die Analyse, wenn auch aufgrund der Stichprobengrösse und Fokussierung auf börsennotierte Unternehmen nur indikativ, sensibilisiert für die Problematik und soll zu weiterer Forschung anregen. Auch steigende Zinssätze und weitere wirtschaftliche Herausforderungen für Unternehmen in der Schweiz unterstreichen die Relevanz der Untersuchung von Zombieunternehmen und deren potenziellen Auswirkungen.

Comment by Camilla Erencin

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On the identification of zombie firms

Luca Mingarelli, Jonas Wendelborn and Tamarah Shakir

A survey of the most prominent definitions of zombie firms, together with their replication on a common dataset for euro area firms spanning the years 2004-2019, shows limited overlap and low comparability in the sets of firms identified by several prominent studies. Such low comparability raises the concern that these definitions are less capturing true zombie firms but rather financially vulnerable ones, and that the policy discourse may be misguided by statements on effectively distinct groups of firms. Thus, a formalization of the classifications of zombie firms is introduced which helps to make order in the growing number of variations and identification methodologies. Such formalization allows the concept of binary identification to be extended to that of fuzzy zombie identification, which allows quantification of a certain degree of "zombieness". A general procedure to turn arbitrary binary classifications into fuzzy ones is also presented and is shown to successfully increase consistency between zombie definitions.

Comment by Felix Reitz

When companies don't die: Analyzing zombie firms in a low interest rate environment

Angela De Martiis and Franziska J. Peter

We examine whether low interest rates foster non-viable firms in Europe by analyzing two classes of firms: zombies and distressed. Controlling for the business cycle and recession periods, we find a significantly negative effect of short-term rates on the likelihood of being a zombie, while no effect for distressed firms is detected. A decrease in inflation and a lower state of the business cycle is associated with a rise in both zombies and distressed firms. Examining a non-conventional monetary policy program, we find no evidence of credit misallocation. Therefore, concurring monetary and macroeconomic phenomena likely explain the presence of non-viable firms, although with dissimilarities between zombies and distressed firms.

Comment by Johannes Binswanger

Recovery and exit of zombie firms in Portugal: A remake Carlos Carreira, Paulino Teixeira and Ernesto Nieto-Carrillo 91

Encouraged by the forbearance of creditors and exit barriers (e.g., inefficient insolvency regimes), the zombie phenomenon has weakened business dynamism and, as a consequence, has slowed economic growth in most economies in recent

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decades. In this paper, we examine the recovery and exit of zombie firms, as well as the determinants of these transitions. Based on a panel of Portuguese firms' population covering the period 2004–2020, we find a widespread prevalence of zombie firms, which are relatively less productive than non-zombies. Moreover, industries with a higher share of zombies have lower productivity levels. Finally, we find that the probability of transition into recovery and exit is relatively small. However, operational and technological restructuring, as well as financial restructuring, are shown to be key drivers of zombie firms' recovery. The insolvency environment is also found to be a strong factor in stimulating business restructuring.

Comment by Reto Föllmi

Articles

A case of unilateral trade liberalization: The autonomous abolition of industrial tariffs by Switzerland in 2024

Thomas A. Zimmermann

On 1 January 2024, Switzerland will implement a major trade policy reform by autonomously eliminating all tariffs on imports of industrial products regardless of their origin. After a brief review of the literature on unilateral trade liberalization and the current Swiss tariff landscape, this paper presents the motivation and the substance of the reform. The elimination of industrial tariffs will reduce the net fiscal burden on imports by around CHF 600 million per year. In addition, imports will be easier to administer, as the Swiss customs tariff will be simplified (thanks to a reduction in tariff numbers) and proofs of origin will no longer be required for goods that remain in Switzerland. We summarize the main findings of studies carried out in the run-up to the reform. The political process and debates leading up to parliamentary approval of the reform, its reception in international fora and the ongoing work on implementation are presented as well. I conclude that the difficult process of obtaining parliamentary approval confirms the insights from the political economy literature that unilateral trade liberalization is politically difficult to achieve in a purely domestic context, despite the economic benefits it brings. From an economic perspective, the contribution of unilateral liberalization to domestic market opening is substantial and has certain advantages, also in comparison to other trade policy instruments such as free trade agreements (FTAs). Unilateral liberalization and preferential liberalization through FTAs need not be mutually exclusive but can be seen as complementary trade policy tools.

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About the authors

Magaly Abboud is a Research Assistant at SIAW-HSG, University of St. Gallen.

Fabio Bernasconi is a Risk Analyst at Julius Bär.

Johannes Binswanger is Professor for Business Economics and Public Policy at the University of St. Gallen.

Carlos Carreira is Associate Professor of Economics at the University of Coimbra and researcher at the Centre for Business and Economics Research (CeBER).

Sara Czégé is a Research Assistant at SIAW-HSG, University of St. Gallen

Angela De Martiis is an Economist at the Institute for Financial Management, University of Bern.

Camilla Erencin is a PhD candidate in Economics at the University of St.Gallen.

Simon J. Evenett is a Professor of International Trade and Economic Development at the University of St. Gallen.

Reto Foellmi is Professor of International Economics at the University of St Gallen.

Luca Mingarelli is Economist in the Money Markets team at the European Central Bank.

Ernesto Nieto-Carrillo is Assistant Professor of Economics at the University of Coimbra.

Franziska Peter is Professor for Empirical Finance and Econometrics at Zeppelin University Friedrichshafen.

Felix Reitz is a PhD candidate at the University of St. Gallen and a Senior Associate at McKinsey & Company, Inc.

Christoph A. Schaltegger is Professor of Political Economics at the University of Lucerne and Director of the Institute for Swiss Economic Policy (IWP).

Tamarah Shakir was Deputy Head of the Systemic Risks and Financial Institutions Division at the ECB until April 2023.

Paulino Teixeira is Full Professor of Economics at the University of Coimbra, researcher at the Centre for Business and Economics Research (CeBER), and Research Fellow at IZA.

Jonas Wendelborn is a Financial Stability Analyst in the Systemic Risk and Financial Institutions division at the European Central Bank.

Laura Zell is a Research Associate and PhD candidate at the Institute for Swiss Economic Policy (IWP).

Thomas A. Zimmermann is head of the Special Foreign Economic Service Division, Ambassador, Delegate of the Federal Council for Trade Agreements and Member of the Board of Swiss State Secretariat for Economic Affairs (SECO) and a Research Associate at SIAW-HSG.

How fares the "commanding heights" of the Swiss economy? Evidence from the Crux of Capitalism project

Magaly Abboud, Fabio Bernasconi, Sára Czégé, Camilla Erencin, Simon J. Evenett and Felix Reitz¹ University of St. Gallen

The track record of Swiss publicly listed companies in creating economic value is assessed, along with their propensity to experience corporate distress. This assessment is conducted both in absolute terms and relative to foreign peers for the years 2005 to 2022. Established measures of corporate distress are augmented by a specially constructed economic profits measure assembled from quarterly financial reports. While on average Swiss firms perform better in economic profit terms than rivals from neighboring countries, there are doubts as to whether Swiss firms can generate higher levels of economic profit in the future, especially as the cost of capital is rising.

 Key words:
 economic profits, economic value creation, corporate distress, bankruptcy, Switzerland

 JEL codes:
 G32, G33, E43, E44, E58

1 Introduction

When he introduced the phrase the "commanding heights" of an economy, Vladimir Lenin meant those economic activities that were strategically important – the locus of national economic power. These activities can be thought of not just in sectoral terms but in terms of individual companies with sufficiently large commercial footprints. While it would be going too far to argue that the success of a nation's largest companies is the sole driver of national economic performance, it is difficult to envisage long-term aggregate improvements in living standards without an economy's commercial behemoths flourishing.

Other considerations justify a focus on the largest firms in an economy. The scale of these firms' commercial operations means they are often significant employers as well as major buyers of goods and services from other national firms. The capital expenditure decisions of such large firms may account for a significant proportion of observed levels of national investment. The same may apply for research and development outlays and these firms may be responsible for a disproportionate share of patent filings. In short, such firms tend to be

¹ Corresponding author: Simon Evenett (simon.evenett@unisg.ch). This paper can be read in conjunction with a methodology paper prepared for the Crux of Capitalism project that is available at https://www.cruxofcapitalism. com/methodology. The authors thank Stefano Carattini, Peter Fischer, Reto Föllmi, Alain Garber, Nannette Hechler-Fayd'herbe, Christoph Schaltegger, Nicolas Stoffels, Jan-Egbert Sturm, Thorsten Truijens, and Pinar Yesin for comments received on an earlier draft of this paper.

central to national innovation ecosystems. Among the "commanding heights" of an economy are firms with the resources to enter foreign markets and with the capability to shift production abroad, potentially weakening the link between the firm and the economy where it is headquartered.

Salient large firms may be associated with their nation of origin and the success or otherwise of the former can reflect on the latter. As the President of General Motors, Charles Wilson, told the U.S. Congress in 1953: "I thought what was good for our country was good for General Motors, and vice versa. The difference did not exist. Our company is too big. It goes with the welfare of the country. Our contribution to the nation is quite considerable." Clearly this argument can be taken too far. Still, the question posed in the title of this paper matters to the perception of Switzerland as a vibrant capitalist economy, to the Swiss public, and to its policymakers.

The capacity of firms in the "commanding heights" of an economy to adjust to changing circumstances is also a longstanding concern. While the focus these days is often on the implications of longer-term dynamics associated with the digital transformation and the energy transition, firms also face sharp changes in short-term business conditions.² The latter include rising interest rates, which are likely to increase the opportunity cost of the capital tied up in a business. Indeed, what some refer to as the ongoing interest rate normalization could put assetheavy business models under considerable pressure. Value-creating corporate strategies may well turn into value-destroying ones.

Our goal in this paper is to quantify how much economic value has been created by publicly listed firms headquartered in Switzerland from their current operations. We exploit the fact that, in many nations, publicly listed firms must release financial statements on a quarterly basis.³ We correct traditional reported measures of accounting profit for the opportunity cost of capital and for other factors that better reveal the level of economic profit of each firm arising from its recent commercial operations. We also compute established measures of corporate distress, specifically, the interest coverage ratio and Altman's Z''-score. Applying this methodology consistently to nearly 40,000 publicly listed firms across 20 economies⁴ plus Switzerland over the years 2005 to 2022 facilitates

² The sharp appreciation of the Swiss franc against the euro in the first quarter of 2015 marked another notable change in short-term business conditions that may well account for some of the intertemporal variation in total economic profits reported later in this paper.

³ Japanese publicly listed companies are an exception: they release half-yearly financial statements.

⁴ Those economies were: Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, South Korea, Malaysia, Netherlands, Russia, Singapore, South Africa, Spain, Sweden, United Kingdom, and United States.

heights" of the Swiss economy.

both absolute and relative assessments of the performance of the "commanding

When we aggregate across Swiss publicly listed firms at a point in time, we are essentially creating a bottom-up measure of value creation by the behemoths of the Swiss economy. The statistics generated by this bottom-up approach complement what might be referred to as top-down national macroeconomic measures, such as gross domestic product. Indeed, given that the Swiss firms considered in this study have international operations, perhaps a more appropriate aggregate comparator is the gross national product of Switzerland.

A bottom-up, firm-based approach has the advantage of linking empirical measures of corporate performance (both value creation and measures of corporate distress) to pressures for business model transformation, corporate restructuring, and other departures from the status quo. Such connections are less evident in traditional macroeconomic statistics.

For example, the growth accounting approach to long-term economic growth makes reference to the volume and quality of factors of production and to total factor productivity as well as to factors influencing the latter. Remarkably, no reference is made in growth accounting to the performance of the very institution that brings factors, technology, and expertise together, namely, the capitalist firm. In relying on existing macroeconomic metrics, there is a risk that the connection to firms and the operational supply side of economies is obscured, if not lost outright, in policy deliberation and professional commentary.⁵

Many metrics pertaining to the supply side of national economies relate to either institutional factors⁶ (such as ease of setting up a business, access to credit, tax burden, corruption, and bankruptcy procedures) or to survey responses relating to the competitiveness of a national economy.⁷ The former are technically inputs or determinants of supply-side performance, while the latter are perception-based. What is missing is a reliable, comparable empirical measure of how well capitalist firms are actually doing in the national and international business environments that they find themselves in. To the extent that publicly listed firms have more resources to capitalise on the commercial opportunities available, focusing on their ability to create value could reveal important insights.

To the extent that corporate distress increases the likelihood of job losses or of job insecurity then, when salient, it may become a source of concern for elected officials where the distressed firms have their commercial operations.
 The variables tracked by the World Bank's Doing Business project come to mind.

⁷ The world competitiveness rankings of IMD Business School and the Global Competitiveness Reports of the World Economic Forum are leading examples.

By creating a bottom-up aggregate measure of performance of larger, established Swiss firms, we are augmenting the set of statistics available to assess the current performance of Swiss capitalism. But, like any aggregate measure, total economic profit must be carefully interpreted and, having laid out our results for Switzerland, we devote Section 8 of this paper to discussing what such statistics might mean and what they do not capture.

This paper draws upon the wealth of empirical evidence generated by the Crux of Capitalism project. This project, undertaken at the University of St. Gallen by us and former colleagues,⁸ seeks to contribute to a number of debates about contemporary capitalisms (notice the plural). For us, the ability of firms to create economic value⁹ is the crux of a capitalist system of economic governance. It is the promise of economic profits that spurs individuals and firms to improve their product and service offerings, to boost productivity, to find new ways to produce the same goods and services with fewer resources, and to expand into new markets and intensify competition that benefits buyers.¹⁰

We recognize that, in recent years, more emphasis has been put on other noneconomic forms of value and do not contest those perspectives. We do note, however, that firms' and societies' capacity to address compelling social, environmental, and other imperatives will be greater if the "commanding heights" of an economy generate significant economic profits. At a minimum, the latter can finance the former.

The remainder of this paper is organized as follows. Section 2 discusses the relationship between the approach taken in this paper and the existing literature. In doing so, the contributions of this paper are further clarified. Section 3 briefly discusses the methodology employed in the Crux of Capitalism project, which is the principal source of data for this project. Summary statistics on Swiss publicly listed companies, which we take to be the "commanding heights" of the Swiss economy, are reported in Section 4.

The absolute and relative performance of Swiss companies is discussed in Sections 5 and 6, respectively. Section 7 summarises our findings from counterfactual assessments of the impact of higher levels of the weighted average cost of capital on the economic profitability in major sectors of the Swiss economy. We devote

⁸ Robin Baumgartner and Fabien Ruf deserve acknowledgement in this respect.

⁹ Here a firm is said to have created economic value when it produces goods and services that customers are willing to pay so much for that the corporate supplier in question can cover all its costs, including the opportunity cost of capital tied up in the business.

¹⁰ As will become evident, we recognize that factors other than innovation and ability to deliver for customers over time can generate high levels of economic profit. We will discuss the relevance of those other factors to the findings presented here on the performance of the firms in the "commanding heights" of the Swiss economy.

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Section 8 of the paper to discussing how to interpret the aggregate findings, in particular as they relate to the total reported levels of economic profit. Concluding remarks are offered in Section 9.

2 Relationship to the existing literature

In seeking to assess corporate performance based on published financial statements, we join legions of analysts – both within and outside of academia – who have pursued this goal. Closest to the approach taken here are those analysts that have sought to calculate measures of economic profits. The Economic Value Added (EVA) measure developed by Stern Value Management is a high-profile example of this approach (CHEN and DODD, 1997).

Our approach to calculating economic profits departs from EVA measures by adding back into the calculation of profitability voluntary firm expenditures that are not directly related to current operations, such as research and development expenses.¹¹ Still, our approach is firmly within the family of economic value-added measures. These measures have been employed in a number of settings, including predicting stock market values, internal firm capital allocation processes, as well as judging management performance.

Since we augment our calculations of economic profit with estimates of the interest coverage ratio (ICR) and Altman's Z''-score, our research is related to the sizeable, distinct literatures on so-called zombie¹² firms and on corporate bankruptcy and distress.

With respect to the zombie literature, our focus here is on zombie identification, scaling the corporate footprint of zombies, and tracking zombie status overtime. Relevant contributions here include FUKUDA and NAKAMURA (2011), BANERJEE and *Hofmann* (2018, 2020), FAVARA et al. (2021), and MINGARELLI et al. (2022). As a result, we do not have much to say about the other important matters raised in that literature, such as the causes and sectoral and macroeconomic consequences of zombie status (ADALET MCGOWAN et al., 2017; CABALLERO et al., 2008; STORZ et al., 2017).

As far as the corporate bankruptcy prediction literature is concerned, almost all empirical studies relate to single countries, often the United States. ALTMAN et

¹¹ We explain the reason for doing so in the next section.

¹² While definitions of zombie firms vary, especially when it comes to approaches to identifying them, by and large, most approaches consider a firm that continues its current operations a zombie if is unable to cover its interest payments from its current profits.

al. (2022) is a noticeable exception. In that paper, Altman's well-known Z-score is modified to allow for cross-country application, resulting in the Z"-score that we will apply. Clearly, this is not the only scoring method available in the bankruptcy prediction literature¹³ but it is, at this time, the one most amenable to cross-country empirical work.

Given the discussion in this paper about the possible consequences of rising interest rates on the commercial viability of Swiss publicly listed firms, our paper is related to the growing literature on interest rate or monetary policy "normalisation", as some prefer to term it (CACERES et al., 2016; CARLSSON-SZLEZAK et al., 2023; FELDSTEIN, 2018). In turn, that can be related to the question as to whether quantitative easing created a slew of zombie firms, that is, firms unable to cover their current interest payments. BERNANKE (2022) rejects that claim. Others, such as RZONCA and PAROSA (2022), read the evidence differently.

Ultimately, our paper seeks to contribute to the existing literature in three respects. First, we present a bottom-up assessment of the track record of Switzerland's publicly listed firms to generate economic profits and to succumb to corporate distress. We know of no systematic assessment of these matters that is currently available.

Second, we contribute to the understanding of how well contemporary capitalism is performing by comparing publicly listed companies across geographies in a structured and consistent manner that is grounded in long-established concepts, such as economic profits. Extant studies with a cross-country focus typically focus on a single metric of corporate performance, while our study employs three measures.

Third, we contribute to the growing literature on the potential consequences of interest rate normalisation, in particular as it relates to the likely pressure certain firms and sectors will face to change the business models they deployed during the era of quantitative easing.

3 Methodology employed

Readers are encouraged to augment the discussion in this section by consulting the extensive methodology paper that has been prepared for the Crux of Capitalism project (BAUMGARTNER et al., 2023). Here we confine ourselves to summarising the principal choices made in this research project.

¹³ Others being found in MERTON (1974), OHLSON (1980), SHUMWAY (2001), and CAMPBELL et al. (2008).

The focus of this project is on publicly listed companies that are headquartered in Switzerland. While we would like to have included privately owned firms in our analysis, the amount of financial data that are consistently available for private firms pales in comparison to publicly listed counterparts.

We employed the Compustat Global and Compustat North America databases to assemble information on the performance of close to 40,000 publicly listed companies headquartered in 21 economies that operate in nine sectors. Those economies were the 20 largest in terms of GDP plus Switzerland. In line with other studies (e.g., STORZ et al., 2017; ALTMAN et al., 2022; MINGARELLI et al., 2022),¹⁴ firms in the banking, insurance, and real estate sectors are excluded from the analysis given that the success of their business models is assessed by sector-specific financial metrics.¹⁵

Data were obtained so that the measures of corporate performance referred to below were available from 2005 onwards. Quarterly and annual financial reports were used in a consistent manner to obtain the largest possible dataset of publicly listed companies in these economies. Inevitably, attrition occurs in the same as firms go bankrupt, delist, merge, or are acquired.

The first measure of corporate performance that we constructed is economic profits from current operations. This involved taking operating income after depreciation and adding back in non-operational voluntary expenses (such as research and development (R&D) outlays), and subtracting taxes paid and the opportunity cost of capital deployed in the firm (the latter being the product of the weighted average cost of capital and the difference between invested capital minus excess cash). As a result, standard reported measures of accounting profit can depart from our measure of economic profit.

Figure 1 shows the consequences of adjusting accounting profit to obtain measures of economic profits for two prominent Swiss-based companies. Novartis' R&D expenses were so large in 2021 that its economic profit exceeded its accounting profit. That is not the case for ABB, where the ratio of economic to accounting profit was less than one in 2021. We will refer to this ratio as AP/EP, and the extent to which it departs from one indicates the degree to which adjustments to financial accounts obscure the current state of value creation by a publicly listed company.

¹⁴ Given the size of the banking and insurance sector in the Swiss economy, this feature of the literature may be regretted by some. Indeed, devising comparable operational metrics for firms operating in the finance sectors could be a profitable line of future research.

¹⁵ The commercial role of interest payments for a bank differs from that of a manufacturer. It makes little sense then to compare the interest coverage ratio of the former with that of the latter.





Note:

Due to data availability, there is a minor difference in the computation of economic profit between US-based and other firms. For US firms, three additional data items are available and need to be added back to accounting profit because they represent voluntary expenses. These are advertising expenses, restructuring expenses, and goodwill. Accounting profit is defined as Operating Income After Depreciation (Computat item OIADP). Tax includes all payments of a given firm to jurisdictions worldwide.

The second measure of corporate performance we deploy is the ratio of operating income before depreciation to total interest and related expenses. We refer to this as the interest coverage ratio (ICR). Unlike others, however, we are not particularly interested in the binary classification of firms as "zombies" or not (on the basis of whether the ICR is above or below one). Rather, we treat this ratio

as a continuous variable that we take as indicating the likelihood that a firm is in such distress that it cannot cover its interest payments.¹⁶

The final measure of corporate performance we calculate is the Altman Z"-score, an indicator of the likelihood of bankruptcy (ALTMAN et al., 2022). This score is constructed from the following financial and market variables: current assets, current liabilities, total assets, total liabilities, retained earnings, operating income after depreciation,¹⁷ and the book value of equity.

All three measures are calculated on both a quarterly and an annual basis. A series of quality control checks were performed before we proceeded to publish these metrics and to analyze the data relevant to this study. Those checks are described in BAUMGARTNER et al. (2023).

A preliminary analysis of the covariance among these three measures in 2021 suggests they are largely uncorrelated.¹⁸ This implies that, when looking across firms, each measure contains different information about corporate performance. As will become evident in the charts that follow relating to national level statistics, when comparing across years these measures are more highly correlated. Even so, noteworthy divergences occur from time to time, suggesting that each metric contains different information about firm performance.

4 Summary statistics on Swiss publicly listed companies

Our first task was to extract the information on Swiss publicly listed companies. Table 1 was constructed to give readers a sense of the quantum and commercial footprint of the Swiss firms under consideration in this paper. We were able to obtain year-in year-out information on approximately 200 publicly listed companies, for which a full dataset of financial information was available for around 130 of them.¹⁹ In 2022, half of the 130 firms for which full data were available were classified by Compustat as being in the industrials sector (43 firms) or the healthcare sector (another 23 firms).

¹⁶ Given that this measure focuses on the interest actually paid rather than the total amount of interest due, the ratio we compute is likely to understate the degree of corporate distress.

¹⁷ In his studies, Altman uses EBIT rather than this measure.

¹⁸ Plots and regression results to support this conclusion are available upon request.

¹⁹ On this metric, the Swiss sample was the fifth smallest among the 21 economies studied.

Sample description	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Firms	216	216	213	211	204	206	205	209	206	203	205	206	205	206	210	207	206	188
Firms with full data	142	150	158	157	143	134	136	144	131	123	125	130	125	126	128	123	125	130
Econ. Profit, \$ billion	32.6	41.1	54.1	63.2	43.3	62.0	64.7	60.4	63.0	64.9	49.8	50.2	50.6	57.4	59.3	73.2	86.2	97.1
Acc. Profit, \$ billion	48.2	67.1	84.2	88.0	72.3	92.5	94.0	9.06	91.8	87.8	74.7	78.1	86.2	94.8	93.0	83.9	113.1	136.3
Revenue, \$ billion	491.3	619.5	749.3	806.8	689.3	824.6	856.9	910.6	913.6	849.5	<i>9.177</i>	757.6	861.8	899.2	902.4	806.3	933.4	1043
Total Assets, \$ billion	507.1	651.8	772.1	<i>9.777</i>	829.3	918.6	948.6	1028	1005	986.4	1006	981	1083	1112	1111	1161	1268	1269
Total tax paid, \$ billion	T.T	13.3	19.6	18.8	13.2	17.7	18.3	19.2	18.5	17.2	18.8	17.5	18.4	19.1	19.5	17.6	21.2	26.5
Employees, million	1.16	1.28	1.41	1.71	1.68	1.83	1.96	2.05	1.98	2.06	2.17	2.19	2.14	2.22	2.13	2.00	1.99	1.96
GDP Deflator, 2022	92.4	94.3	96.6	98.0	98.4	98.7	98.7	98.8	98.7	98.1	96.8	96.2	95.9	9.96	96.5	95.8	96.8	100.0

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Note:

The number of firms with full data include firms with economic profit, ICR and Altman's Z"-score data. The number of employees cannot be divided by the number of workers in Switzerland to gauge our coverage of the Swiss economy given that the data presented above included employees of Swiss firms abroad. The sectoral decomposition of the 130 firms with full data in 2022 is as follows: Materials (14), Industrials (43), Consumer Discretionary (14), Consumer Staples (9), Healthcare (23), Information Technology (15), Communication Services (8), and Utilities (4).

With assets totaling more than \$1,250 billion in 2022, correcting for the opportunity cost of capital can be expected to introduce a wedge between total reported accounting and economic profits. This was indeed the case, with total accounting profits of \$136 billion exceeding total economic profits by almost \$40 billion. In just six years the economic profits of the firms at the "commanding heights" of the Swiss economy have doubled from \$50.6 billion in 2017 to \$97.1 billion in 2022.²⁰

Swiss publicly listed companies employed 2 million people worldwide in 2022, a number that has fallen from its 2018 peak. These Swiss firms paid over \$26 billion in taxes to governments around the world in 2022, an amount equivalent to one-fifth of their accounting profits in that year.

Total reported revenues, accounting profits, and economic profits need not move together, as shown in the year when the COVID-19 pandemic broke out (2020). In that year, total economic profits rose while traditional metrics (accounting profits and total revenues) fell. Even so, the simple correlation coefficient between aggregate accounting and economic profits from 2005 to 2022 was 0.88.

5 Absolute performance of Swiss publicly listed companies over time

The annual variation in inflation-adjusted economic profits and in the AP/EP ratio of Swiss publicly listed companies is shown in Figure 2. Three phases are discernible for the evolution of economic profits. In the boom years before the Global Financial Crisis, total economic profits rose. The first full year of the crisis (2009) witnessed total economic profits fall by 32%.

Then, in the second phase, during the decade that follows total economic profit varied in a range between \$50 billion to \$75 billion. In the final phase, which coincided with the onset of the COVID-19 pandemic, total inflation-adjusted economic profits rose sharply. Consistent with the notion that total value creation by Swiss firms is sensitive to macroeconomic conditions, it took 12 years for total economic profits to clearly surpass those levels witnessed before the Global Financial Crisis. This observation casts the surge in total economic profits during 2020 and 2022 in a less positive light.

²⁰ Clearly, all of the magnitudes mentioned in this paragraph could have been expressed in Swiss francs. Expressing them in US dollars provides, in the cases of economic and accounting profits, an indication of the buying power on global markets of the surpluses generated by Swiss publicly listed firms.



Figure 2: Inflation-adjusted economic profit of Swiss firms

The nominal economic profit value was multiplied by the GDP deflator to adjust for inflation. Data on countries' GDP deflator was sourced from the World Bank Development Indicators. The base year is 2022. The EP/AP ratio represents the aggregate nominal value of economic profit as a share of the aggregate nominal value of accounting profit (restricted to the number of firms with economic profit data available).

Another interpretation may cast the intertemporal performance over the past 10 years in a different light. Recall there was a sharp increase in the value of the Swiss franc against the euro in 2015 that was not fully reversed subsequently. Such an appreciation would have affected the export competitiveness of Swiss publicly listed companies selling into the euro area. This headwind could have halted the growth in aggregate economic profit witnessed in the years before 2015. Put differently, in the absence of this exchange rate shock, Swiss publicly listed firms might have reached the pre-Global Financial Crisis peak level of economic profitability sooner.²¹

Throughout the years 2005 to 2022, economic profits stayed within 60% to 80% of total accounting profit. Put differently, the latter consistently over-estimated the total value creation of Swiss publicly listed companies by a significant margin.

Companies differ in their level of economic profitability. A "winner takes all" dynamic has been observed in other capitalist economies (PHILIPPON, 2019; DORN, 2021) and the question arises as to whether a small number of firms generate an outsized share of aggregate economic profits. As Figure 3 shows, the answer to

Note:

²¹ We thank Jan-Egbert Sturm for encouraging us to think through the implications of the 2015 currency appreciation. We note that the degree of sales exposure to the euro area varies across Swiss publicly listed firms and such variation might be usefully exploited in future research.

this question is a clear "yes". Outside crisis years, the 10% of Swiss publicly listed companies that generate the most economic profits together account for between 85% to 100% of total calculated economic profits. In crisis years, these top 10% of firms generated all of the estimated aggregate economic profits, implying that the net contribution of the remaining 90% was close to zero.





Figure 4: Distribution of inflation-adjusted economic profit in Switzerland





The impressive economic profit-making potential of the most successful Swiss firms extends from the 10th percentile (as shown in Figure 3) to the 25th percentile (as shown in Figure 4). In 2021 and 2022, the firms around the 25th percentile created economic profits in excess of \$200 million. Even the median Swiss publicly listed company created over \$50 million in economic profits.

The results for the firms around the 75th percentile are of interest, too. With the exception of the crisis years (2009 and 2020), even firms this far down the profit distribution were able to cover their costs, including the opportunity costs of the capital tied up in their business. Still, in 2022 around a quarter of Swiss publicly listed firms generated negative economic profits, which means they destroyed value during their ordinary operations.

We identified the Swiss publicly listed firms in the 10th percentile of each year. Restricting our analysis to firms that were in the top decile for three or more years, a total of 20 such firms were identified, and are listed in rows of Table A1 in the appendix. Garmin Ltd, Nestlé, Novartis, Roche and Swisscom can be found in the top decile every year from 2015 to 2022. The ability of Roche, Nestlé, and Novartis to sustain their relative position is particularly impressive. In fact, looking across the rows and columns of Table A1, nine firms remain in the top decile of economic profit generating firms for 10 or more years. This implies, however, that the other 11 firms listed in Table A1 move into and drop out of the top decile, indicating some degree of fluidity in the best profit-generating firms.

Turning now to indicators of corporate distress, we focus on the proportion of Swiss publicly listed firms that (a) generated negative economic profits, (b) had an ICR below one (taken by many to indicate zombie firm status), or (c) had negative Z"-scores indicating a higher likelihood of bankruptcy.

To assess how sensitive these proportions were to any one year's data, we calculated those proportions in two ways: first, using only the data for the year in question; and second, using data for the past two consecutive years. Therefore, the latter measure shows, for example, the proportion of Swiss publicly listed companies that were zombies for two years running. The main findings are summarized in Figures 5 and 6 and in Table 2.

Figure 5: Share of Swiss firms under financial distress based on single year data



Figure 6: Share of Swiss firms under financial distress in two consecutive years



Proportion of Swiss firms with EP < 0, ICR <1, Z"-Score < 0 in two consecutive years. If no data is available for a given year, the condition of two consecutive years is not met (conservative approach). Year 2005 (latest available data) is omitted, as there is (almost) no data for the previous year 2004 available.

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in %	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
EP < 0	-	0.13	0.10	0.11	0.14	0.21	0.14	0.14	0.16	0.12	0.08
ICR < 1	-	0.09	0.11	0.13	0.17	0.17	0.15	0.17	0.19	0.14	0.15
Z'' < 0	-	0.02	0.02	0.04	0.03	0.02	0.02	0.04	0.05	0.05	0.04
	2016	2017	2018	2019	2020	2021	2022				
EP < 0	0.13	0.13	0.10	0.10	0.10	0.18	0.13	1			
ICR < 1	0.16	0.18	0.16	0.19	0.22	0.24	0.17	1			
Z''<0	0.05	0.07	0.05	0.06	0.07	0.07	0.05				

 Table 2:
 Share of Swiss firms under financial distress in two consecutive years

Assessed on yearly data, as shown in Figure 5, two indicators point to higher proportions of corporate distress during the Global Financial Crisis and the onset of the COVID-19 pandemic. Since 2005, on average 23% of Swiss publicly listed firms could be classified as zombies. Nearly the same percentage destroyed economic value.²² Yet, on average, only 6.2% of firms had negative Z"-scores during the years from 2005.

Insisting that underperformance lasts two years before classifying a firm as being in corporate distress necessarily reduces the percentages mentioned in the last paragraph (as can be seen by comparing the respective lines in Figures 5 and 6). The percentage of value-destroying firms (those generating negative economic profits) halves. The percentage of zombies falls a quarter to 15.5% for the average year. The percentage with negative Z''-scores falls to 4.2%, or by a third. Perhaps more interesting the percentage of zombie firms rises from an average of 13.4% during the years 2006–10 to an average of 19.4% during 2018–22. Likewise, the mean percentage of firms with negative Z'' scores rises from 2.5% to 6.1% over the same timeframe.

Overall, the track record of Swiss publicly listed companies over time is mixed. Only in the very recent past have the firms in the "commanding heights" of the Swiss economy been able to generate in aggregate economic profit levels that beat those witnessed before the Global Financial Crisis. Although very high levels of economic profits are concentrated in a small number of firms, there has been some fluctuation in the composition of top-performing firms. At the other end of the distribution, however, growing percentages of Swiss publicly listed firms are showing signs of corporate distress.

²² Weighting firms either by the total number of employees, total assets, or total debts tends to reduce the proportion of firms destroying economic value. The divergence between weighted and unweighted proportions has grown since the onset of the COVID-19 pandemic.

6 Performance relative to peers

Note:

We now compare the performance of Swiss publicly listed companies with their counterparts in other nations. We start by making a comparison with neighboring countries, specifically, with French, German, and Italian firms. Figures 7 and 8 and Table 3 contain the main empirical findings.

When median economic profit levels are compared, as they are in Figure 7, striking international differences emerge. The median levels of economic profits for French, German, and Italian firms do not exceed \$10 million in any year. By contrast, the median Swiss level of profitability only fell below that threshold in 2009.²³ Moreover, the median level of Swiss profitability increases on trend over time. Arguably, year-on-year volatility in median profitability is higher in Switzerland than in its neighbors. When sharp falls in median Swiss profitability are observed, they tend to be reversed within two calendar years.





One of the reasons for the exceptionally high median EP in Switzerland could be that predominantly large firms decide to go public in Switzerland. Differences in the sectoral composition across countries may be another factor at work.

²³ To examine whether differences in the sectoral composition of publicly listed firms could be driving these results, we repeated this analysis for each of the nine sectors separately. In six of the nine sectors Swiss median economic profit performance equalled or exceeded that of firms from neighboring countries.















Crosses denote the mean while boxes delimit the interquartile range and show the median. Outliers are not shown on the box plots.

	CHE	DEU	FRA	ITA
Median EP, in \$ million	38.3	6.7	1.7	1.7
Median ICR	12.6	6.1	3.6	6.5
Median Z"-Score	7.1	6.0	5.0	5.4

Table 3:	Empirical distributions compared across countries, 20	22
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Figure 8 reveals the empirical distributions of the observed levels of economic profits, ICR ratio, and Z"-score. The substantial differences in median economic profitability seen in Figure 7 do not carry over to the ICR and Z"-scores.²⁴ Swiss exceptionalism does not extend to the latter indicators of corporate distress, in particular to the Z"-score. Yet, as the evidence on outliers shows, on all three metrics reported in Figure 8, Switzerland has far fewer outliers at both ends of the distribution – meaning there are proportionally fewer stand-out superstar Swiss firms and fewer Swiss firms on life support.

Now we widen the comparison, benchmarking the total amounts of economic profit made by Swiss firms with the total generated by publicly listed firms in other groups of foreign nations. We created three comparator groups: the six EU member states for which we had collected data; the members of the G7 group; and the "world" (taken to be all 20 other nations in our sample.) As those groups have larger economies and tend to have more listed firms, unsurprisingly Swiss total economic profits as a share of the profits generated in these groups was always less than one.

To benchmark appropriately, we compared the Swiss shares of economic profits of each group with the Swiss share of the combined national income of the same group. In essence, we asked the question: do Swiss firms generate more economic profits than their national income share would suggest? The answer is a clear "yes", especially when the comparison is made with the members of the European Union (see Figure 9).

²⁴ Notice also the substantial differences between the mean and median levels of economic profitability in France, Germany, and Switzerland.







Figures 10 to 12 benchmark each nation's economic profit generation in 2021 with the number of employees on the payroll of publicly listed companies, with the total amount of capital tied up in these company's businesses, and with their total revenues. The variation across the countries for which we have data is significant. When countries are ranked in terms of economic profit per employee, per US dollar of capital employed, and per US dollar of revenues, Switzerland is consistently the top-performing nation, followed by Australia, Netherlands, and the United States. Italy, Japan, Spain, and Singapore are found consistently at the wrong end of the ranking. Caution is needed here in drawing too many conclusions from a single year's data.



Figure 10: Economic profit per employee across countries, 2022

Economic profit is shown in million \$ per employee. The ratio is calculated by dividing the sum of total economic profit per country (only for firms for which economic profit and employee data is available in 2022) by the sum of total employees (only for firms for which economic profit and employee data is available in 2022)





Ratio of total EP to total assets

Ratio of total EP to total employees

Note:

Note:

The ratio is calculating by dividing the sum of total economic profit per country (only for firms for which economic profit and asset data is available in 2022) by the sum of total assets per country (only for firms for which economic profit and asset data is available in 2022).





In sum, when it comes to the capacity to generate economic profit, there is a clear performance premium of Swiss firms over counterparts in other capitalist economies.²⁵ This is not to imply that every Swiss firm does better than its rivals abroad, but there is a clear tendency to do so and that tendency has persisted. When it comes to indicators of zombie firm status and bankruptcy prediction scores, the Swiss performance premium is less discernible.

is available in 2022).

7 Robustness of Swiss publicly listed firms to rising costs of capital

We recognize that there have been changes in monetary policy regimes during the years that we evaluate corporate performance. Arguably, there have been three regimes: the "standard" Taylor rule-driven regime that prevailed before the Global Financial Crisis; the Crisis response regime followed by various bouts

²⁵ One conference participant suggested that Switzerland's superior economic profit performance reflected the fact that a higher proportion of its publicly listed companies were multinationals with significant international footprints. That participant suggested comparing Swiss performance to that of Dutch firms. We note that Sweden and the United Kingdom are often said to have higher proportions of multinational firms. So we compared the median economic profit performance of Swiss firms with British, Dutch, and Swedish counterparts. Only the Dutch multinationals came anywhere close to meeting the Swiss median economic performance. Not since 2007 has Dutch median profit performance exceeded comparable Swiss performance. We take from these findings that a profit premium for being a multinational firm is possible but not assured.

of quantitative easing; and now the so-called interest rate normalisation that is motivated, in part, by the desire to tackle the unusually high levels of inflation of recent years. Indeed, it is the prospect of a return to permanently higher interest rates and with its corporate bond yields that is the focus of this section.

Clearly, we have no special insight into how high interest rates will rise over the months and years to come. Nor can we know how the management of Swiss publicly listed firms will react to higher costs of capital. But what we can do is use recent reported financial performance to identify which firms and sectors would cease creating economic profits if their weighted costs of capital rose by different amounts and if their managers declined to adjust.²⁶

Indeed, such "as is" counterfactuals can identify how many more Swiss firms would move from value-creating status to value-destruction if their managements failed to react. Such counterfactuals can indicate which firms and which sectors of the Swiss economy will face pressures to transform their business models. Put differently, if the quantitative easing era induced managers to adopt asset-heavy business models, then will rising interest rates encourage a shift to new business models that can better cover the opportunity cost of capital deployed?

We took the financials reported by each publicly listed Swiss firm in 2022 as well as information on their computed weighted average cost of capital (WACC).²⁷ As shown in Table 4, with the WACC prevailing in 2022, a quarter of Swiss publicly listed companies generated negative economic profits during that calendar year. These value-destroying firms employed approximately 122,000 people and had about \$80 billion of assets tied up in their businesses.

Next we recalculated the counterfactual levels of economic profits generated if the WACC was raised progressively for each firm by 1 percentage point, 3 percentage points, and 5 percentage points (Figure 13 and Table 4). Unsurprisingly, as the WACC level rises, so does the proportion of firms failing to earn positive economic profits.²⁸ A 1 percentage point increase in WACC does not raise that proportion much, but a 3 percentage point increase results in a third of Swiss publicly listed firms moving into value-destruction territory. An across-the-board increase in WACC by 3 percentage points would double the number of

²⁶ Our focus on interest rate normalisation is just one of the counterfactual analyses that could be conducted with Crux of Capitalism data. Others include changing corporate tax rates and levels of employee compensation.

²⁷ Since 2022 is the baseline against which the counterfactual is calculated, the changes in the proportion of value destroying Swiss firms is taken from the baseline proportion of firms that made negative economic profits in 2022 (as opposed to in 2021 and 2022). Therefore, the proportion of value destroying firms in Table 4 correspond to the relevant annual estimate reported in Figure 5.

²⁸ More generally, however, as the WACC increases, *ceterius paribus*, the estimated levels of economic profit for each firm will fall. This is true for those firms whose economic profit level remains positive after the WACC increase.

people and the amount of capital working in value-destroying businesses, when compared to 2022 outcomes.

If WACC were to rise 5 percentage points, then only 60% of Swiss publicly listed firms could be confident that their current business models would continue to generate positive economic profits.





Note:

Crosses denote the mean while boxes delimit the interquartile range and show the median. Outliers not shown on the box plot

 Table 4:
 Effect of WACC increase on employees and assets of Swiss firms, 2022

Variable	WACC	WACC +1pp	WACC +3pp	WACC +5pp
Share of firms with $EP < 0, \%$	26.5	28.2	33.3	39.3
Employees in firms with $EP < 0$	122,829	143,639	270,061	300,543
Assets of firms with $EP < 0$, \$ million	80,026	101,077	191,580	207,052

To the extent that interest rate normalization results in firms facing higher WACC – not least because many debt-financed companies have yet to roll over their loans at higher interest rates – then pressures will mount to change business models and corporate strategy. Such pressures are likely to be concentrated in certain sectors of the Swiss economy, as the calculations in Table 5 reveal. An across-the-board 3 percentage point increase in WACC would significantly increase the proportion of firms making negative economic profits in the consumer discretionary, consumer staples, and materials sectors.

Note:

Firms with EP < 0, %	WACC	WACC +1pp	WACC +3pp	WACC +5pp
Communication Services	37.5	37.5	37.5	37.5
Consumer Discretionary	26.7	33.3	40.0	46.7
Consumer Staples	22.2	22.2	33.3	33.3
Energy				
Health Care	34.8	34.8	34.8	47.8
Industrials	20.9	20.9	27.9	30.2
Information Technology	25.0	25.0	25.0	25.0
Materials	21.4	35.7	42.9	57.1
Utilities	50.0	50.0	50.0	75.0

Table 5:Effect of WACC increase on the number of Swiss firms with
EP < 0, 2022

In 2022, there are no publicly-listed energy firms headquartered in Switzerland.

In contrast, firms in communication services and information technology sectors are unlikely to cease earning positive economic profits – perhaps due to the fact that, in general, firms in these sectors have been able to generate more economic profits in the years since the onset of the COVID-19 pandemic.

Unless firms take steps to reduce capital tied up in their businesses, it is difficult to see how higher interest rates – a consequence of interest rate normalization after the era of quantitative easing – can support recent levels of aggregate economic profits generated by the firms in the "commanding heights" of the Swiss economy. This implies that the unusually high aggregate levels of economic profits generated in 2021 and 2022 by Swiss publicly listed companies is unlikely to be sustained. In turn, this increases the likelihood that the total amounts of economic profit created by leading Swiss firms will return to the range witnessed in the previous decade, that is, in inflation-adjusted terms between \$50 billion and \$75 billion.

8 Do high levels of aggregate economic profits imply that the "commanding heights" of the Swiss economy are protected from competition?

It may be tempting to make inferences about the degree of competitive pressure on firms based on the findings for economic profits reported here. Some may be tempted to reason as follows: as we all learned in our first economics class, in a perfectly competitive market with free entry and exit in the long run, economic profits should settle down to zero. If positive levels of economic profit can be sustained over time, then this is due to barriers to entry (including those created by patents), direct or indirect state support for firms, or regulatory capture conferring some benefit on incumbent firms. Following this view, the findings on high levels of economic profits for Swiss publicly listed firms, especially for the most profitable firms, could lead to the conclusion that competitive forces have been blunted in the "commanding heights" of Swiss capitalism.

We challenge this interpretation on four grounds. First, positive economic profits can be earned by firms that have a distinctive and hard-to-copy corporate strategy. That corporate strategy may be built around a difficult to understand and replicate core competence which was developed organically and was neither nurtured nor sustained by the state or by lobbying the state.

Second, the economic profits earned by each firm refer to their global operations. A Swiss firm may earn much more economic profits abroad than at home, indicating that any lack of competitive pressure may, in fact, be in foreign markets.

Third, we checked whether there were unusually high levels of median firm profits in the more regulated sectors of the Swiss economy, where the potential for rent-seeking cannot be ruled out. In the communication services sector, the median economic profit level has been close to zero for several years now. In the health care sector, the median profit levels are lower during the past decade than before; likewise in the utilities sector (where, in fact, median firm economic profitability was close to zero in the three years preceding the pandemic). These sectoral findings are hard to square with a rent-seeking explanation.

Fourth, to the extent that competitive pressure erodes the market power of previously highly profitable firms and increases pressure on the management of laggard firms to improve or exit, then a competitive economy might be one where the coefficient of variation of economic profits across firms is lower than in a less competitive economy.

We calculated the relevant coefficient of variations for all 21 economies for each year from 2005 to 2022.²⁹ The rising median economic profit levels reported earlier for Swiss firms were not associated with increases in the Swiss coefficient of variation. In fact, those Swiss coefficients have fluctuated within a narrow range. Moreover, comparing across the European economies studied here, only the Netherlands has a lower coefficient of variation of economic profit than Switzerland in recent years. All of the other European economies, including all of Switzerland's neighbors, have higher coefficients of variation. Such evidence is hard to square with Switzerland's high levels of economic profit being associated

²⁹ The results are available upon request.
with unusually high levels of market power, barriers to entry, or rent-seeking when compared to European peers.

Although Swiss firms are largely economic profit-making, it is worth asking whether there is anything to be learned from a firm or a sector making negative economic profits over time.³⁰ Arguably, yes. To survive, negative economic profit-making firms are either (a) selling off assets as they destroy value, (b) able to persuade a private sector lender to advance them funds while they are going through a "rough patch", or (c) receiving explicit or implicit state support.

The first of these three reasons only has an upside if the firms in question are undergoing a transformation of their business models. Otherwise, here sustained negative economic profits indicate a declining or "sunset" industry. When presented with evidence of the latter, policymakers may wish to ease the eventual exit of employees and capital from the firms and sector in question. Structural adjustment policies can thus be informed by economic profit performance metrics.

The second reason implies that some other private sector actor sees a chance for redemption for the value-destroying firms or sectors in question. Whether that comes to pass, only time will tell. Presumably, those funding actors have strong incentives to allocate their resources wisely having conducted the appropriate market analysis, due diligence, and so on. In these cases, there may not be a public policy concern.³¹

In the absence of evidence of asset sales or private sector support, persistent negative economic profits could be an indication of sustained state subsidisation or other forms of support (including encouraging private lenders to roll over loans to the firms in question). In principle, the combination of sustained evidence of negative economic profits and the indicators of corporate distress described earlier in this paper could be used to ascertain whether certain firms or sectors are likely to have received state support. Red flags could be raised, etc. Since state support to firms need not be transparent, being able to infer circumstances where such support is more likely to have been furnished could be of value to competition agencies, finance and trade ministries, and international organizations concerned about resort to selective policy intervention.

In sum, the metrics developed and presented in this paper can generate evidence that can inform a range of domestic and international economic policymaking.

³⁰ We thank Reto Föllmi for encouraging us to explore this matter further.

³¹ There might be a competition law problem if the funding was part of a predatory strategy to drive non-supported firms out of the market. This is not the place to go into the preconditions for predation strategies to work, however, it is worth noting that this is a highly contested matter.

9 Concluding remarks

We set ourselves the task of assessing how well the firms in the vanguard of Swiss economy are doing in terms of generating value and avoiding corporate distress. When compared to foreign publicly listed firms, in particular in Europe, Swiss performance looks impressive, at least with respect to the ability to generate economic profits. If making positive economic profits is what successful capitalist firms are supposed to do, then the firms in the "commanding heights" of the Swiss economy appear to be getting something right.³²

Where there are concerns is with respect to performance over time. For sure, results for 2021 and 2022, especially as they relate to economic profits, were impressive. But will such performance last? Should interest rates return to peak levels seen earlier this century before the Global Financial Crisis (around 3.5%), then this would create a drag on economic profitability. Yet, the counterfactual evidence presented here suggests that the weighted average cost of capital would have to rise considerably further before putting pressure on firms in certain sectors of the Swiss economy to change their business models.

In addition, we found evidence that the current operating performance of a growing number of Swiss publicly listed firms is such that they are likely in corporate distress. Such distress may have been obscured by various adjustments in published financial accounts.

As the COVID-era stimulus wears off around the world, Swiss internationally oriented firms may find it difficult to maintain recent higher levels of economic profit generation. This may tip aggregate economic profit generation back into the range witnessed during the past decade. In turn, this begs the question as to why, as a class, Swiss firms are unable to profit more from the ongoing digital transformation of societies and from the energy transition.

More generally, in this paper we have made the case for augmenting the set of short-run macroeconomic metrics with one rooted in the actual economic value creation performance of a nation's publicly listed firms. Combined with upto-date indicators of corporate distress, we believe that central bankers, other government officials, analysts, journalists, and researchers are now in a position to better track the supply-side performance of the "commanding heights" of capitalist economies.

³² The word "appear" was used deliberately because, in principle, differences in sectoral composition of publicly listed companies, differences in age, and other factors could account for some of reported cross-country differences in profit performance.

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Appendix

Swiss Superstars: Ranking Swiss firms that have been three or more years under the top 10% in terms of economic profit, 2005-2022 Table A1:

_	_	_		_		_	_	_			_	_	_	_	
2022	8		6	90	11	17	12	15	7	4	2	1	19	13	5
2021	7		9	18	6	14	Ξ	13	5	ŝ	2	1	19	12	4
2020	28		12	Ξ	9	10	7	125	6	e	2	1	15	×	4
2019	6		10	20	9	11	~	131	14	ŝ	2	1	17	13	4
2018	10		~	6	9	15	11	132	13	ŝ	2	1	14	12	4
2017	4		Г	15	6	21	10	131	12	ŝ	2	1	14	13	Ś
2016	4	7	11	37	10	15	6	135	12	ŝ	2	1	16	14	~
2015	4	6	Г	129	10	18	11	132	12	ŝ	2	1	13	14	
2014	4	6	Г	23	10	15	12	127	14	ŝ	2	1	13	17	
2013	5	10	9	17	12	15	11	136	14	ŝ	2	1	13	20	
2012	5	10	9	19	11	15	12	146	14	ŝ	2	1	13	20	
2011	4	13	~	12	11	18	17	140	16	ŝ	2	1	14	28	7
2010	4	8	Г	12	10	17	14	138	15	ŝ	2	1	13	23	
2009	4	8	6	144	Г	12	17	145	13	ŝ	2	1	10	28	
2008	4	12	11	15	10	20	22	6	19	ŝ	2	1	16	29	
2007	4	11	13	14	10	23	32	8	19	ŝ	2	1	18	30	75
2006	4	13	29	11	10	22	12	6	20	ŝ	2	1	17	33	~
2005	4	15	33	13	11	22	6	10	18	e,	1	2	14	32	~
Sector	Industrials	Health Care	Consumer Discretionary	Materials	Consumer Discretionary	Industrials	Materials	Materials	Industrials	Consumer Staples	Health Care	Health Care	Industrials	Materials	Information Technology
Top 10% firms	ABB LTD	ACTELION LTD	CIE FINANCIERE RICHEMONT AG	DSM FIRMENICH AG	GARMIN LTD	GEBERIT AG	GIVAUDAN SA	HOLCIM LTD	KUEHNE & NAGEL INTERNATIONAL	NESTLE SA/AG	NOVARTIS AG	ROCHE HOLDING AG	SGS SA	SIKAAG	STMICROELECTRONICS NV

Top 10% firms	Sector	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
SWATCH GROUP AG	Consumer Discretionary	12	14	12	13	15	6	10	∞	~	11	28	133	56	28	30	127	28	30
SWISSCOM AG	Com. Services	5	9	6	~	6	9	9	٢	7	9	9	9	~	5	5	5	~	10
SYNGENTA AG	Materials	7	7	7	9	5	5	5	4	4	5	5	5	9					
TE CONNECTIVITY LTD	Information Technology				17		139		6	19	∞	∞	13	11	7	7	119	10	6
XSTRATA PLC	Materials	9	5	5	7	146	11	6	148										
EP share of TOP 10% Swiss f	irms	0.89	0.87	0.86	0.87	1.07	0.92	0.92	66.0	0.91	0.88	96.0	0.91	0.91	0.89	96.0	06.0	0.89	06.0
No. of top 10% Swiss firms		14	15	16	15	14	13	14	14	13	12	13	13	13	13	13	12	13	13
No. of total Swiss firms		144	155	160	159	146	139	140	148	136	127	132	135	131	132	132	127	131	132
Note: Swis	s firms are include	ed if the	sy were	three o	or more	times	under tl	ne top]	10% of	Swiss	publicl	y listed	firms	in term	s of ec	oimonic	: profit	(2005-:	2022).

Comment on "How fare the "commanding heights" of the Swiss economy? Evidence from the Crux of Capitalism project" by Magaly Abboud, Fabio Bernasconi, Sára Czégé, Camilla Erencin, Simon J. Evenett and Felix Reitz

Christoph Schaltegger Universität St. Gallen IFF-HSG and Institut für Schweizer Wirtschaftspolitik

Capitalism is an irritant in any debate on the social and economic order. Reference is often made to the production and working conditions of the late 18th century and early 19th century, which were essentially determined by the interests of the owners of capital and thus created social dependencies for the poor. However, things have changed considerably with the social market economies of today. A social market economy also respects the fundamental principles of capitalism, provided that the redistributive concerns of a society are respected. The essential features of capitalism are the protection of private ownership of the means of production and the control of production and consumption via the market (market economy).

In capitalism, entrepreneurs therefore play a central role as well as corporations. When it comes to the question of how well capitalism actually works in an economy, it is interesting to look at the corporate sector. This is precisely where the paper by MAGALY ABBOUD, FABIO BERNASCONI, SÁRA CZÉGÉ, CAMILLA ERENCIN, SIMON EVENETT and FELIX REITZ and the entire Crux of Capitalism project come in. Publicly listed Swiss companies are analyzed according to how healthy they are. There are various ways to determine the health status of a company. This can depend on solvency or over-indebtedness as well as the question of generating sustainable profits. SIMON EVENETT and his team offer a large amount of data and are thus able to provide an important overview of the state of health of Swiss companies. This is very valuable, especially in comparison with other neighboring countries. The authors of this paper show that Swiss companies tend to be more profitable than their counterparts in neighboring countries. However, this favorable picture could soon change. This is the result of their projections.

The Crux of Capitalism database is a new and important basis for determining the health status of the Swiss economy and can therefore also serve as an important thermometer for policymakers to determine the need for economic policy action. Against this background, the results should also be interpreted with caution. Firstly, high profits in the corporate sector do not necessarily mean that the corporate sector is healthy in the capitalist sense. If one follows the theoretical

basis in microeconomics, there would even be good arguments to expect the opposite. This is because full competition between companies would mean that producers would no longer be able to appropriate profits. Of course, this is a theoretical ideal that has some limitations in reality. But it points to an important point: profits do not have to be the result of a healthy corporate sector; they can also arise from a lack of competition or from rent-seeking activities by companies. Both are indications of the opposite of a healthy corporate sector. And they point to a problem of economic policy decisions.

The authors are of course well aware of this problem. Important robustness tests point in the direction of their interpretation, which is a real added value of the paper. Nevertheless, it would be interesting to analyze the increasing influence of the corporate sector on rent-seeking in politics in more detail and to determine which part of earnings is actually due to innovation and productivity and which to monopoly protection and other privileges. Furthermore, it would be an interesting extension of the project to separate the solvency indicators of the companies from the profit and revenue indicators and, with a comparison, to obtain indications of healthy and unhealthy profits.

Zombiefirmen: Ein Schatten über der Wirtschaft

Christoph A. Schaltegger und Laura Zell Universität St. Gallen IFF-HSG und Institut für Schweizer Wirtschaftspolitik; Institut für Schweizer Wirtschaftspolitik

Zombieunternehmen werden mittlerweile sowohl in den Medien als auch in der Wissenschaft breit diskutiert. Da sich die meisten Studien vorrangig international mit dem Phänomen auseinandersetzen, fehlt es an detaillierten Analysen für die Schweiz. Das vorliegende Kurzpapier beleuchtet daher gezielt Schweizer Zombieunternehmen anhand von Daten börsennotierter Unternehmen des Crux of Capitalism-Projekts. Entsprechend den internationalen Trends können wir eine zunehmende Zahl von Zombieunternehmen auch in der Schweiz bestätigen und 26 solcher Unternehmen für das Jahr 2022 (13,8% unserer Stichprobe) identifizieren. Die Analyse, wenn auch aufgrund der Stichprobengrösse und Fokussierung auf börsennotierte Unternehmen nur indikativ, sensibilisiert für die Problematik und soll zu weiterer Forschung anregen. Auch steigende Zinssätze und weitere wirtschaftliche Herausforderungen für Unternehmen in der Schweiz unterstreichen die Relevanz der Untersuchung von Zombieunternehmen und deren potenziellen Auswirkungen.

 Key words:
 productivity, capital misallocation, economic profits, zombie firms, insolvency, firm exit

 JEL codes:
 E43, L25, G32, G33

Zombies sind ein Evergreen der Popkultur. Spätestens mit der Finanzkrise 2007/2008 ist ihnen als Zombieunternehmen auch der Einzug ins Wirtschaftsvokabular gelungen. Die dank günstigem Geld knapp am Leben erhaltenen Unternehmen sind seither Gegenstand zahlreicher internationaler Studien. In diesen Übersichtsstudien ist die Schweiz oftmals enthalten, eine vertiefte Analyse fand bisher nicht statt. In diesem Kurzpapier unternehmen wir einen Versuch, die Erscheinung der Zombieunternehmen konkret für die Schweiz zu beleuchten. Hierzu verwenden wir Daten börsennotierter Unternehmen, die im Rahmen des Crux of Capitalism-Projekts berechnet wurden. Die Analyse hat aufgrund der Beschränkung auf börsennotierte Unternehmen nur indikativen Charakter. Unser Kurzpapier soll und kann jedoch auf eine vernachlässigte Problematik aufmerksam machen und zu weiterer Forschung anregen.

Warum gerade jetzt? Nach einer langen Niedrigzinsphase bahnt sich eine bemerkenswerte Wende an: Unternehmen sehen sich in einem herausfordernden wirtschaftlichen Umfeld mit steigenden Zinssätzen konfrontiert. Dazu gesellen sich eine schwache Produktivitätszunahme, anziehende Inflation, drohende Energieknappheit und gestörte Lieferketten. Die Folgen sehen wir in einer steigenden Anzahl der Unternehmensausfälle. Zombieunternehmen dürften den schwierigen Bedingungen als erste zum Opfer fallen. Angesichts dieser unsicheren Aussichten für das Jahr 2023 ist es von Bedeutung, die Dynamik der Zombieunternehmen und die Ansteckungsgefahr für andere Unternehmen in der Schweiz zu beleuchten.

Wenn Zombies wandeln, leidet die Volkswirtschaft

Als Zombies gelten Menschen, die nur dem Anschein nach noch am Leben sind. Als seelen- und willenlose Wesen wandern sie umher und stellen eine Gefahr für die tatsächlich Lebendigen dar. Analog gelten Unternehmen als Zombies, wenn sie kein tragfähiges Geschäftsmodell mehr haben, sich nur durch billige Kredite und staatliche Unterstützung künstlich am Leben erhalten. Eine hohe Anzahl solcher Zombieunternehmen ist für die Volkswirtschaft äusserst schädlich. Der Begriff «Zombiefirma» wurde vor allem von CABALLERO, HOSHI und KASHYAP (2008) geprägt, die Japan nach dem Platzen der Wirtschaftsblase in den 1990er Jahre untersuchten.¹ Anstatt Verluste in ihren Büchern anzuerkennen, verliehen japanische Banken weiterhin Geld an scheiternde Unternehmen. Nach der Analyse der Autoren war dieses Vorgehen kein Nebenprodukt der jahrelang stagnierenden Wirtschaft Japans, auch bekannt als die «verlorene Dekade», sondern eine der Hauptursachen.

Insbesondere «schwache» Banken, also solche, deren Solvenz bedroht ist, haben Anreize, Kredite an nicht lebensfähige Unternehmen zu verlängern, statt abzuschreiben (CABALLERO et al. 2008). Der Grund: Abschreibungen würden zu einer zusätzlichen Erosion ihres Eigenkapital führen. So kommt es zu Kredit-Fehlallokationen. Die Kreditvergabe an Zombieunternehmen geht zu Lasten der Vergabe an produktive Firmen. Sind viele Zombiefirmen auf dem Markt, kommt es zusätzlich zu einer «Zombie-Stauung»: Ineffiziente Unternehmen binden wertvolle Ressourcen wie qualifizierte Arbeitskräfte und Immobilien, die für produktivere Unternehmen eingesetzt werden könnten. Das blockiert innovative Unternehmen, schränkt den Wettbewerb ein und hemmt technologische Innovation. Die resultierende wirtschaftliche Schwäche verhindert ihrerseits, dass Banken ihre Kapitalpuffer wieder aufbauen. Bankseitige Zugeständnisse an Kreditnehmer zur Verzögerung oder Vermeidung von Zahlungsausfällen werden «Forbearance»-Massnahmen genannt. Diese verzerren die Information über die Qualität der Kredite in der Bilanz und liefern somit ein falsches Bild über die «Exposure» der Bank (ACHARYA et al. 2021). Dadurch erhöht sich die Instabilität des gesamten Bankensystems.

Noch aus einem weiteren Grund sind Zombieunternehmen schlecht für eine prosperierende Wirtschaft: Ihr Ansteckungsrisiko gleicht dem der Zombies aus

¹ Erstmals verwendet wurde der Begriff von KANE (1987).

der Popkultur. So kann es etwa im Fall steigender Zinsen zu einer plötzlichen Insolvenzwelle kommen, die Gläubiger, Kreditinstitute, vernetzte Unternehmen und auch den Sozialstaat mitreisst.

Forschung und globale Trends

Um sich ein Bild über die Zombifizierung in der Schweiz zu machen, muss definiert werden, wann genau ein Unternehmen ein Zombie ist. Bei Zombieunternehmen verhält es sich jedoch wie bei «echten» Zombies: Sie ziehen es vor, sich im Schutz der Dunkelheit zu verbergen. In der Praxis kommen daher viele verschiedenen Proxy, also indirekte Bestimmungsgrössen, für Zombieunternehmen zur Anwendung. So werden beispielsweise Unternehmen als Zombies klassifiziert, die subventionierte Kredite erhalten (CABALLERO et al. 2008). Einige Studien erklären Unternehmen zu Zombies, wenn sie für eine längere Zeit ihre Zinsen nicht aus dem Unternehmenseinnahmen decken können (ADALET McGOWAN et al. 2018). Durch die Berücksichtigung des Tobin's O, eines Indikators, der die Über- oder Unterbewertung eines Unternehmens anzeigt, wird die erwartete zukünftige Profitabilität in die Definition eines Zombieunternehmens miteinbezogen (BANERJEE und HOFMANN 2022). Dies soll sicherstellen, dass Unternehmen als Zombies klassifiziert werden, die dauerhaft unrentabel sind und nicht nur mit kurzfristigen Zahlungsschwierigkeiten zu kämpfen haben. Eine Studie des Internationalen Währungsfond (IWF) verwendet ebenso einen Indikator für Profitabilität (ALBUQUERQUE und IYER 2023): So muss ein Zombieunternehmen neben einem negativen Zinsdeckungsgrad und einer Verschuldungsquote über dem Industriemedian auch negatives Umsatzwachstum aufweisen. In anderen Studien wiederum müssen neben einer langfristigen Nichtprofitabilität auch negative Nettoinvestitionen und die Unfähigkeit, Schulden zu tilgen, vorliegen, um ein Unternehmen als Zombie zu qualifizieren (STORZ et al. 2017). Wiederum andere kombinieren Nichtprofitabilität und ein hohes Ausfallrisiko, um zu erkennen, ob eine Firma ein Zombie ist (SCHIVARDI et al. 2022). Die Studie im Rahmen des Crux of Capitalism-Projekts wiederum betrachtet Unternehmensnotlage auf einer kontinuierlichen Skala, die etwas über die Wahrscheinlichkeit aussagt, ob ein Unternehmen ein Zombie ist (ABBOUD et al. 2023).

Anhand dieser Definitionen sind unterschiedlichste Fragestellungen untersucht worden (siehe Tabelle 1 im Appendix für eine detaillierte Auflistung). CABALLERO et al. (2008) finden für Japan, dass Zombieunternehmen den Markt überfüllen, und dies reale negative Auswirkung auf die Produktivität gesunder Unternehmen hat. Adalet McGowan et al. (2018) bestätigen diese Ergebnisse für die betrachteten OECD-Länder, und finden zusätzlich neben geringeren Expansionsmöglichkeit für gesunde Unternehmen bei einer Zombiestauung auch höhere Markteintrittsbarrieren und geringere Wachstumschancen für junge Firmen. Für sieben OECD-Länder ermitteln STORZ et al. (2017) wiederum, dass schwache Banken die Entschuldung von Zombieunternehmen verzögern. Dieses Ergebnis wurden von SCHIVARDI et al. (2022) für Italien bestätigt. Mit Hinblick auf die Entwicklung der Zombifizierung im Zeittrend ermitteln BANERJEE und HOFMANN (2022), dass der Anteil der Zombiefirmen seit den 1980er Jahren mit dem Rückgang der Zinssätze global gestiegen ist. **Niedrige Zinsen** und somit günstige Verschuldungskosten reduzieren den finanziellen Druck auf Zombieunternehmen sich zu restrukturieren oder vom Markt zu gehen (BANERJEE und HOFMANN 2022). Die Autoren weisen mit ihrem Ergebnis auf einen Trade-Off hin: Niedrige Zinssätze erhöhen zwar die Nachfrage und die Investitionen, gleichzeitig kommt es zu einer erhöhten Anzahl an Zombiefirmen, die auf das Produktivitätswachstum drücken.

Auch in der Schweiz sind die Zinssätze seit Anfang der 2000er auf einem allgemein niedrigen Niveau. Insbesondere als Antwort auf die **Finanzkrise** 2007/2008 hat die SNB den Leitzins mehrmals gesenkt, um die Wirtschaft zu stimulieren und eine Deflation zu verhindern (JORDAN 2020).

Abbildung 1: Viele Länder verzeichnen steigende Zahlen an Zombiefirmen Anteil der Zombieunternehmen an den börsennotierten Unternehmen, in %



die Schweiz, das Vereinigte Königreich und die Vereinigten Staaten von Amerika.

Quelle:

BANERJEE und HOFMANN (2020).

International wurden während der Finanzkrise neben einer expansiven Geldpolitik noch weitere Massnahmen eingesetzt, die die Zombifizierung vermutlich verstärkt haben: «Forbearance»-Massnahmen, kriseninduzierte Unterstützungspolitik bis hin zu vollständigen Rettungsaktionen und damit verbundene Fehlanreize kommen als mögliche Schuldige in Betracht. Auch der schädliche Beitrag schwacher Banken in der Folge der Finanzkrise konnte durch die Forschung bestätigt werden (ACHARYA et al. 2019; KALEMLI-ÖZCAN et al. 2016; SCHIVARDI et al. 2022; STORZ et al. 2017): Unter Druck stehende Banken haben im Vergleich deutlich mehr Zombiekredite vergeben, was die Konkursrate für gesunde Unternehmen erhöhte und für eigentlich nichtüberlebensfähige Unternehmen senkte. Schlecht konzipierte Insolvenzregelungen verschärften die Situation: Ist es schwierig oder langwierig für Banken ihre Forderungen gegenüber insolventen Kreditnehmern durchzusetzen, verringert dies ihre wirtschaftlichen Anreize, Kredite an Zombieunternehmen als notleidend («nonperforming») anzuerkennen und Umstrukturierungs- oder Liquidationsverfahren einzuleiten (ANDREWS und PETROULAKIS 2017).

Die Auswirkungen der **Corona-Pandemie** ab dem Jahr 2020 führten teilweise zu einem Stillstand der Wirtschaft. Ähnlich wie zur Bewältigung der Finanzkrise wurden schnelle und weitreichende Massnahmen ergriffen, um die Auswirkungen der Corona-Pandemie auf die Wirtschaft abzufedern: Staatliche Unterstützungsmassnahmen, wie zinsgünstige und staatlich abgesicherte Kredite und Härtefallhilfen an Unternehmen, zielten auf die Überbrückung von Liquiditätsproblemen (SCHWEIZERISCHE EIDGENOSSENSCHAFT 2020). Die gewährten Covid-19-Überbrückungskredite in der Schweiz beliefen sich auf fast 17 Mrd. Franken.² Rund 30 Prozent der KMU haben einen Covid-19-Kredit aufgenommen (BUNDESRAT 2022).³ Obwohl diese Mittel zumindest kurzfristig dazu beigetragen haben, Arbeitsplätze und Lebensgrundlagen zu schützen, haben sie das Problem der Zombifizierung der Wirtschaft verschäft. Denn ob es sich bei den Unternehmen um solche mit valablen Geschäftsmodellen in finanziellen Schwierigkeiten oder um Zombieunternehmen handelte, konnte in der Eile nicht immer unterschieden werden.

In Abbildung 2 wird ersichtlich, dass die Coronahilfen weitere Herausforderungen verstärkt haben: Die globale Staats- sowie Unternehmensverschuldung relativ zum BIP nahm zu Beginn der Pandemie stark zu und hat sich seitdem nur wenig verringert.

² Dies umfasst den Gesamtbetrag aller gewährten Kredite, und nicht nur den vom Staat verbürgten Anteil.

³ Gerechnet werden KMU mit mehr als zwei Vollzeitstellen.



Abbildung 2: Verschuldung stieg mit der Coronakrise stark an

Verbreitung der Zombies in der Schweiz

BIS.

In globalen und europäischen Zombie-Studien bleibt die Schweiz bisweilen eine Randnotiz. In der nicht schweizspezifischen Untersuchung des BIS ist die Schweiz enthalten (BANERJEE und HOFMANN 2022). Die Datengrundlage ist jedoch dünn und die Untersuchungen sind auf börsennotierte Unternehmen beschränkt. Albuquerque und Iyer (2023) untersuchen sowohl börsennotierte als auch nichtbörsennotierte Unternehmen. Sie bestätigen einen weltweit steigenden Trend, und ermitteln einen Anteil von 5-6 % Zombieunternehmen in der Schweizer Wirtschaft im Jahr 2021. Eine Studie des Beratungsunternehmens Kearney (HANDELSZEITUNG 2022) macht für die Schweiz im Jahr 2010 einen Zombie ausfindig, 2022 sind es bereits ein Dutzend: Die Schweiz verzeichnet demnach ein rasantes Wachstum an Zombieunternehmen. Abbildung 3 illustriert, dass die Schweiz gemessen am BIP über einen der grössten Bankensektoren verfügt. Die Untersuchung der Zombieunternehmen ist daher für die Stabilität des Finanz- und damit des Wirtschaftssystems der Schweiz von besonderer Bedeutung.

Quelle:

Abbildung 3: Die Schweiz hat einen der grössten Bankensektoren relativ zum BIP

Grösse des Bankensektors relativ zum BIP nach Land, in %



Unsere Analyse basiert auf dem Datensatz des Crux of Capitalism-Projekts und damit auf Unternehmensdaten von 288 börsennotierten Schweizer Unternehmen von 2005 bis 2022. In den analysierten Daten ist der Finanz- und der Immobiliensektor ausgeschlossen, da diese Sektoren in der Regel eine höhere Verschuldung aufweisen und befürchtet werden muss, dass dort angesiedelte Unternehmen nicht nach den gleichen Messwerten – operatives Ergebnis und Zinsschuld – klassifiziert werden können.

Unsere Definition von Zombieunternehmen ist angelehnt an ADALET McGOWAN et al. (2018) und klassifiziert Unternehmen als Zombies, die für mindestens drei aufeinanderfolgende Jahre einen Zinsdeckungsgrad, auch bekannt als ICR (interest coverage ratio) von weniger als 1 aufweisen und zudem seit mehr als 10 Jahren existieren. Basierend auf der Methodologie des Crux of Capitalism-Projekts berechnet sich der Zinsdeckungsgrad aus dem Verhältnis der operativen Einnahmen nach Wertminderung zu den gesamten Zinsaufwendungen. Normalerweise wird der ICR aus dem EBIT (Gewinn vor Zinsen und Steuern) berechnet. Im Gegensatz dazu stellt die hier verwendete Definition sicher, dass die Kennzahl nicht durch unerwartete Einkünfte und andere einmalige Ereignisse beeinflusst wird (ABBOUD et al. 2023). Ist der Wert grösser als 1, liegen die Zinszahlungen unter den operativen Unternehmenseinnahmen. Ist der Wert kleiner als 1, übersteigen die Zinszahlungen die Einnahmen. Der ICR gibt somit an, wie gut ein Unternehmen seine Zinszahlungen aus seiner Geschäftstätigkeit decken und wie gut es auf unerwartete Änderungen reagieren kann. Grundsätzlich sollte ein Unternehmen langfristig nicht mehr für seine Schulden ausgeben, als es aus dem Geschäft erwirtschaftet.

In Übereinstimmung mit den erwähnten internationalen Studien können wir den steigenden Trend in der Zahl der Zombiefirmen auch für die Schweiz bestätigen. Allerdings sehen wir 2022 einen leichten Rückgang, der sich auf einer bereits steigenden Konkursrate begründen könnte. Im Jahr 2022 finden wir 26 Zombieunternehmen, was einem Anteil von 13.8 % unserer Stichprobe entspricht.

Bei der ICR-Regel von 1 handelt es sich um eine Heuristik. Die Kapitalstruktur von Unternehmen variiert zwischen Regionen und insbesondere zwischen Sektoren stark (BANERJEE und HOFMANN 2018). Der Zinsdeckungsgrad berücksichtigt auch nur den aktuellen Zeitpunkt und keine zukünftigen erwarteten Erträge oder Rücklagen. Das kann zu Unterschieden führen, ab welchem Zinsdeckungsgrad Unternehmen finanziell riskant werden. Die Ratingagentur Standard & Poor's (S&P) betrachtet in der Regel einen Zinsdeckungsgrad von unter 3 als Anlass zur Sorge. Um diese Unklarheit zu adressieren, betrachten wir, wie sich die Zombifizierung in Abhängigkeit des gewählten Schwellwertes verhält. Die untere Grenze der schattierten Fläche in Abbildung 4 entspricht der Anzahl der Zombie-Unternehmen bei einer ICR von 0.5 und die obere Grenze der Anzahl der Zombie-Unternehmen bei einer ICR von 1.5. Der generelle Trend zu mehr Zombies bleibt somit für verschiedene Zinsdeckungsgrade bestehen.

Die Verteilung der ICR in der untersuchten Unternehmensstichprobe wird in Abbildung 5 genauer beleuchtet. Es fällt auf, dass die Mehrheit der Unternehmen einen Zinsdeckungsgrad von über 1.5 aufweist. Darunter fällt die Kurve steil ab. Dies deutet auf einen Schwellenwert hin, unter dem Unternehmen unrentabel werden und möglicherweise vom Markt ausscheiden müssen. Die Kurve flacht hingegen gegen oben deutlich langsamer ab. Dies lässt sich damit erklären, dass ein niedriger Zinsdeckungsgrad für ein Unternehmen gefährlich sein kann, während ein zu hoher auf ungenutzte Wachstumschancen hinweisen kann.

Abbildung 4:Steigende Anzahl an Zombieunternehmen in der SchweizAnteil der Zombieunternehmen im Crux of Capitalism-Datensatz, in %





Hinweis:

Börsennotierte Unternehmen, ausgenommen ist der Finanz- und Immobiliensektor. Angelehnt an die Definition von Adalet McGowan et al. (2018) sind Zombies Unternehmen, die seit mindestens zehn Jahren tätig sind und deren Zinskosten die operativen Einnahmen nach Wertminderung während drei aufeinanderfolgenden Jahren übersteigen. (Zinsdeckungsgrad < 1 für 3 konsekutive Jahre und Alter \ge 10 Jahre). Schattierung bezeichnet die abweichende Definition von Zombieunternehmen mit ICR = 0.5 und ICR = 1.5.

Quelle: Eigene Berechnungen; Crux of Capitalism, SIAW-HSG.

Abbildung 5: Die Verschiebungen des Grenzwertes verändert die Ergebnisse kaum



Verteilung des Indikators Zinsdeckungsgrad

Hinweis:
 Alternative Festlegung des Indikators für Zombieunternehmen bei Zinsdeckungsgrad von 0.5 vs. 1.5. Gleichbleibende Definition von drei konsekutiven Jahren zur Qualifikation eines Zombieunternehmens. Hier graphisch begrenzt auf -20/+20.

 Quelle:
 Eigene Berechnungen; Crux of Capitalism, SIAW-HSG.

Der verwendete Datensatz lässt ebenfalls eine Betrachtung der Zombifizierung nach Wirtschaftssektoren zu. In Abbildung 6 wird ersichtlich, dass es signifikante Unterschiede zwischen den Branchen gibt. Ein besonders grossen Zombie-Anteil weist der Werkstoff- sowie der Gesundheitssektor auf. Auch der Kommunikationsund IT-Sektor zeichnen sich durch relativ viele Zombieunternehmen aus. Allgemein ist bei der Interpretation der Auswertung nicht nur aufgrund der begrenzten Stichprobengrösse Vorsicht geboten. Die Unterschiede in der gemessenen Zombifizierung zwischen den Branchen können auch auf Faktoren zurückzuführen sein, wie zum Beispiel eine stärkere Abhängigkeit von Fremdkapital oder Businessmodelle, die mit hohen Investitionen verbunden sind.

Abbildung 6: Einige Sektoren sind stärker betroffen als andere



Anteil der Zombieunternehmen pro Sektor, in %

Langsam werden die Folgen der Zombifizierung sehr konkret sichtbar. In Abbildung 7 können wir steigende Konkursraten in der Schweiz im Quartalsvergleich ablesen. Auch eine Studie des Beratungsunternehmens Dun & BRADSTREET (2023) meldete für das erste Quartal 2023 eine Zunahme der Unternehmenspleiten zum Vorjahr um 36 Prozent. Besonders stark betroffen waren hier das produzierende Gewerbe und der Einzelhandel. Auch das BFS verzeichnete für 2022 eine doppelt so hohe Konkursrate (Firmen- und Privatkonkurse) wie die durchschnittliche Entwicklung der letzten fünf Jahre vor der Pandemie (BFS, 2023). Eine Studie von CREDITREFORM (2022) erwartet zudem mit Blick auf die konjunkturellen Rahmenbedingungen kein baldiges Abflachen der Firmenkonkurse.



Abbildung 7: In der Schweiz steigen die Konkurse

Fazit

Jahre der expansiven Geldpolitik und Staatssubventionierung haben in der Schweiz eine hohe Anzahl an Zombieunternehmen geschaffen und die Unternehmens- und Staatsverschuldung wachsen lassen. Steigende Inflationsraten zwingen die Zentralbanken nun, den Tropf des billigen Geldes zu schliessen. Die ersten Folgen davon lassen sich in Form von steigenden Konkursraten bereits beobachten.

Unsere Analyse findet einen ansteigenden Trend der Zombieunternehmen in der Schweiz. Um die Wirkung der Schweizer Eigenheiten betreffend Insolvenzverfahren und der Kreditvergabe auf die Zombifizierung zu berücksichtigen, bedarf es weiterer Forschung. Zum einen gilt es einen Datensatz zu entwickeln, der das schweizerische Unternehmensumfeld repräsentativ abbildet: Da sich insbesondere in der Schweiz Unternehmen häufiger für eine Finanzierung über Banken anstelle eines Börsengangs entscheiden, ist es besonders wichtig nicht-börsennotierte Unternehmen in einer Analyse abzudecken. Zum anderen sollte schon aufgrund der Relevanz des schweizerischen Bankensektors der Finanzsektor in den Untersuchungen inkludiert werden. Aufgrund der Heterogenität der Indikatoren ist es wichtig verschiedene Messwerte zu betrachten, um die Resultate auf ihre Konsistenz zu prüfen.

Es können jedoch bereits Lehren aus der existierenden Forschung gezogen werden. Die Forschung zeigt, dass höhere Zinsraten zu geringeren Zombies und geringere Zombies zu höherer Produktivität der Volkswirtschaft führt: Wenn unproduktive Unternehmen vom Markt gedrängt werden, erhellen sich die gesamtwirtschaftlichen Aussichten. Gleichzeitig sind die Zinsraten ein stumpfes Instrument, das hohe negative Folgen haben kann. Es gilt aus den Fehlern der Vergangenheit zu lernen, damit es erst gar nicht so weit kommt. Das heisst auf der einen Seite: Wenn ein Unternehmen kein funktionierendes Geschäftsmodell hat, muss es in Konkurs gehen. Dazu gehört auf der anderen Seite: Die Widerstandsfähigkeit des Finanzsektors muss sichergestellt werden.

Als allgemeine Empfehlung zur Bekämpfung der Zombifizierung nennt die OECD (ANDREWS et al. 2017) eine Reform der Insolvenzregime, damit eine Liquidation oder Restrukturierung kranker Unternehmen nicht verzögert wird. Dies verringert Markteintrittsbarrieren und fördert Innovation. Um diesen Prozess zu erleichtern, sind schnelle Massnahmen zur Behebung verbleibender Schwächen im Bankensektor notwendig. Denn Verzerrungen bei der Kreditbewertung im Bankensektors stellen einen Haupthindernisgrund für Unternehmenssanierungen dar: Zombiefirmen hängen mit schwachen Banken zusammen, was darauf hinweist, dass das Problem mit «Forbearance»-Massnahmen zusammenhängt. Überhaupt: Eine kompetente Kreditvergabe ist die wichtigste Funktion der Banken und für das Funktionieren der Wirtschaft zentral. Aufgrund des grossen Bankensektors der Schweiz ist diese Empfehlung für die Schweiz besonders relevant. Und generell ist es eine bewährte Strategie zur Bekämpfung der Zombifizierung, auf allgemeine wirtschaftspolitische Massnahmen zu setzen, die Innovation, Produktivität und Wachstum fördern.

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Studien zur Zombifizio	erung mit Hauptergebnissen und betrachteten Ländern
	Haupterkenntnis
Caballero et al. (2008)	Banken haben einen Anreiz Kredite an Zombieunternehmen zu ve
	«Zombiestauung» führte dazu, dass gesunde Unternehmen Investi
	Beschäftigung und Produktivität reduzieren. Anteil der Zombieun
	in Japan der börsennotierten Unternehmen in Produktion, Bauwes
	Einzelhandel, Grosshandel, Immobilien- und Dienstleistungssekte
	verdreifachte sich auf ca. 30 % zwischen Anfang der 1990er und 2
	Jahre.
Storz et al. (2017)	Schwache Banken spielen eine Rolle bei der Verschuldung von
	Unternehmen, insbesondere von Zombieunternehmen. Vor allem

Literaturüberblick

Tabelle 1

Appendix

	Haupterkenntnis	Zeitraum und Länder
Caballero et al. (2008)	Banken haben einen Anreiz Kredite an Zombieunternehmen zu verlängern.	1982-2002
	«Zombiestauung» führte dazu, dass gesunde Unternehmen Investitionen,	Japan
	Beschäftigung und Produktivität reduzieren. Anteil der Zombieunternehmen	
	in Japan der börsennotierten Unternehmen in Produktion, Bauwesen,	
	Einzelhandel, Grosshandel, Immobilien- und Dienstleistungssektor	
	verdreifachte sich auf ca. 30 % zwischen Anfang der 1990er und 2000er	
	Jahre.	
Storz et al. (2017)	Schwache Banken spielen eine Rolle bei der Verschuldung von	2010-2014
	Unternehmen, insbesondere von Zombieunternehmen. Vor allem in den	Sieben EU-Länder: Deutschland,
	Peripherieländern der Eurozone können schwache Banken zu einer erhöhten	Frankreich, Griechenland, Irland,
	Verschuldung von Zombieunternehmen führen.	Portugal, Slowenien, Spanien
Adalet McGowan et al.	Ein höherer Anteil des branchenweiten Kapitals, das in Zombieunternehmen	2003-2013
(2018)	gebunden ist, ist von geringerem Investitions- und Beschäftigungswachstum	13 OECD-Länder: Belgien,
	und einer geringeren Reallokation von produktivitätssteigerndem Kapital	Finnland, Frankreich,
	gekennzeichnet. Neben der Begrenzung der Expansionsmöglichkeiten	Grossbritannien, Italien,
	gesunder etablierter Unternehmen kann die Marktkongestion, die durch	Schweden, Slowenien, Spanien,
	Zombieunternehmen entsteht, auch Barrieren für den Markteintritt schaffen	Südkorea
	und das Wachstum junger Unternehmen nach dem Markteintritt behindern.	(nur 2013: Deutschland,
		Luxemburg, Österreich, Portugal)

	Haupterkenntnis	Zeitraum und Länder
Banerjee und Hofmann (2022)	Von 4 % in den späten 1980er Jahren stieg der Anteil der Zombieunternehmen bis 2017 auf 15 %. Zombieunternehmen sind kleiner, weniger produktiv, stärker verschuldet, investieren weniger. Im Laufe der Zeit haben etwa 25 % der Zombieunternehmen den Markt verlassen, während sich 60 % von ihrem Zombie-Status erholen. Allerdings schneiden sich erholende Zombieunternehmen im Vergleich zu Unternehmen, die noch nie Zombies waren, schlechter ab, und sie haben eine hohe Wahrscheinlichkeit, wieder in den Zombie-Status zurückzufallen.	1980-2017 14 OECD-Länder: Australien, Belgien, Dänemark, Deutschland, Frankreich, Grossbritannien, Italien, Japan, Kanada, die Niederlande, Schweden, Schweiz, Spanien, USA
Schivardi et al. (2022)	Schwache Banken waren in Folge der Finanzkrise weniger wahrscheinlich dazu bereit, Kredite an Zombieunternehmen abzuschreiben. Die fehlerhafte Zuweisung von Krediten erhöhte die Ausfallrate gesunder Unternehmen und verringerte die Ausfallrate nicht lebensfähiger Unternehmen. Während der Finanzkrise kam es zu einer erheblichen Kreditfehlallokation. Dennoch war der Beitrag von Banken mit geringem Kapital zur Schwere der Rezession durch fehlerhafte Kapitalzuweisung bescheiden, obwohl sie langfristig eine wichtige Quelle für aggregierte Ineffizienz darstellen können.	1talien
Albuquerque und Iyer (2023)	Der Anteil der Zombieunternehmen nimmt insbesondere seit der Finanzkrise und der Covid-19-Pandemie weltweit zu. Die Zombifizierung bei nichtbörsennotierten Unternehmen ist geringer als bei börsennotierten. Zombiefirmen haben bedeutende negative makrofinanzielle Auswirkungen: Die finanzielle Leistungsfähigkeit von Nicht-Zombieunternehmen wird in Branchen mit einer höheren Anzahl von Zombies dauerhaft beeinträchtigt. Länder mit einer starken Bankenstruktur und strengen makroprudenziellen Massnahmen weisen weniger Zombies auf. Neben einer Stärkung des Bankensektors braucht es effiziente Insolvenzrahmenbedingungen.	1997-2022 (nichtbörsennotierte Unternehmen) 43 Länder 2000-2022 (börsennotierte Unternehmen) 63 Länder

50

	Haupterkenntnis	Zeitraum und Länder
Abboud et al. (2023)	Ein wachsender Prozentsatz börsennotierter Schweizer Unternehmen	2005-2022 (börsennotierte
	zeigt Anzeichen von Unternehmensschwierigkeiten. Dennoch übertreffen	Unternehmen)
	Schweizer Unternehmen ihre EU-Nachbarn in Bezug auf wirtschaftlichen	Australien, Brasilien, China,
	Gewinn. Bei Zinsnormalisierung ist es unwahrscheinlich, dass Schweizer	Deutschland, Frankreich, Indien,
	Unternehmen das hohe Niveau der Wertschöpfung aufrechterhalten können.	Indonesien, Italien, Japan, Kanada,
		Malaysien, Niederlande, Russland,
		Schweden, Schweiz, Singapur,
		Spanien, Südafrika, Südkorea,
		USA, Vereinigtes Königreich.

Comment on "Zombiefirmen: Ein Schatten über der Wirtschaft" by Christoph A. Schaltegger and Laura Zell

Camilla Erencin University of St. Gallen

Research focus and main results

Leaving an era of zero interest rates behind, CHRISTOPH SCHALTEGGER and LAURA ZELL take the opportunity to examine the trends of "zombification". Their analysis centers on publicly listed companies in Switzerland that may struggle to meet borrowing obligations. This matter assumes particular importance in the Swiss context given the substantial bank financing of the private sector.

Their study, based on the Crux of Capitalism database, focuses on 288 publicly listed Swiss firms from 2005 to 2022 (excluding financial and real estate sectors). Following the zombie definition of ADALET McGOWAN et al. (2018), Schaltegger and Zell highlight an increasing trend in the number of zombie firms in Switzerland. In 2022, 13.8% of publicly listed firms are unable to meet their borrowing obligations, a stark increase from the approximately 4% observed in 2005. The majority of listed firms have interest coverage ratios of around 1.5, with a noticeable drop below this threshold, indicating their struggle to remain profitable and competitive. From a sector perspective, the materials and healthcare sectors exhibit the highest share of zombie firms, ranging between 16% and 18%.

The authors argue that while the short-term impact of COVID-19 stimulus packages was beneficial in protecting jobs and livelihoods, it has worsened the zombification problem within the economy. The resurgence of bankruptcy openings in 2022 coincides with the tapering of stimulus packages and the increase in interest rates. Highlighting the necessity of unviable business models exiting the market, the authors stress the significance of a resilient financial sector in reversing the zombification trend in Switzerland.

Assessment of the paper's findings

The authors make key contributions in two primary areas: the geographical focus and the interconnectedness with the financial sector. Initially, the paper delves into the zombification phenomenon observed in publicly listed firms in Switzerland, addressing an issue that, despite its significance to the Swiss economy, has not undergone comprehensive analysis to date. Contrary to Switzerland's perception as a robust and stable economic entity, the research underscores its sensitivity to the global trend of zombification, although not to the extent noticed in other major economies.

Secondly, the paper goes beyond a mere examination of the rising prevalence of zombie firms, establishing connections between zombification and the pivotal role played by financial institutions. Given the substantial contribution of Swiss financial institutions to the nation's economic vitality, the fulfilment of borrowing obligations of firms headquartered in Switzerland becomes increasingly critical for the country. The synthesis of the rising number of zombie firms and the centrality of Switzerland's financial institutions in the economic landscape highlights a compelling nexus, which deserves further research.

This leads to another prominent aspect of the paper, which lies in its characterization as an "overview study" — a designation it aptly fulfils. Shedding light on the development of zombie firms on both a national and sectoral scale, and delving into bankruptcy rates and debt crises, establishes a solid foundation for subsequent research. To provide a holistic assessment of the Swiss economy, it is crucial to provide numbers of zombie firms among non-listed firms. Acknowledging the challenge posed by the limited accessibility of financial data for non-listed firms, the proposition to construct a dedicated database for Switzerland emerges as a central contribution.

Next, an analysis of the proportion of distressed firms within banks' portfolios in Switzerland could serve to validate the paper's hypothesis that banks facing pressure tend to extend loans more liberally to zombie firms. The empirical findings could pave the way for a reconsideration of existing insolvency laws and the efficacy of policies aimed at resolving non-performing loans. This aligns seamlessly with the overarching message of the paper – the pivotal role of competent credit lending to ensure the long-term health of the Swiss economy.

The metric deployed to identify zombie firms is the ratio of operating income to total interest and related expenses. While SCHALTEGGER and ZELL align with the zombie identification methodology of ADALET McGOWAN et al. (2018), they depart from the conventional binary classification of firms as either zombies or not (based solely on whether the interest coverage rate falls above or below one). Instead, the paper acknowledges different definitions within the existing literature, in line with variations in capital structure across regions and sectors. To address this, SCHALTEGGER and ZELL include a lower (interest coverage = 0.5) and upper bound (interest coverage = 1.5) in their analysis. The overarching trend reveals a consistent uptick in the survival of zombie firms, with a higher proportion of total listed firms within the interest coverage ratio bounds between 2019 and 2022

(as well as during the period from 2010 to 2013). Consequently, while 13.8% of Swiss firms carry the label of zombie in 2022, an additional approximate 2% are likely to turn into this status, registering an interest coverage ratio between 1 and 1.5 in 2022.

Certainly, considering the recent trend of interest rates getting back to "normal", it would be helpful to study how the zombification situation has changed in the quarters of this year and its impact on the Swiss economy. Based on what we have seen in this paper, it is likely that those firms SCHALTEGGER and ZELL identified with an interest coverage ratio between 1 and 1.5 are the ones struggling to pay their interest payments in 2023. It would be intriguing to see if these companies can adapt their business plans to become successful again or if they end up closing down in the medium to longer term. Observing this could offer valuable lessons, especially within specific industries.

This paper plays a crucial role in addressing the issue of zombie firms within the Swiss economy. Positioned as an overview study, it not only lays the groundwork for future research but also holds immediate relevance for Switzerland. With the ongoing shift in monetary policies, research on zombie firms faces an opportune moment to test the hypothesis that higher interest rates lead to a decline in zombie firms, in Switzerland and other large economies.

References

ADALET MCGOWAN, MÜGE, DAN ANDREWS, und VALENTINE MILLOT (2018), The walking dead? Zombie firms and productivity performance in OECD countries, *Economic Policy* 33 (96), pp. 685–736.

On the identification of zombie firms

Luca Mingarelli, Jonas Wendelborn and Tamarah Shakir¹ European Central Bank

A survey of the most prominent definitions of zombie firms, together with their replication on a common dataset for euro area firms spanning the years 2004-2019, shows limited overlap and low comparability in the sets of firms identified by several prominent studies. Such low comparability raises the concern that these definitions are less capturing true zombie firms but rather financially vulnerable ones, and that the policy discourse may be misguided by statements on effectively distinct groups of firms. Thus, a formalization of the classifications of zombie firms is introduced which helps to make order in the growing number of variations and identification methodologies. Such formalization allows the concept of binary identification to be extended to that of fuzzy zombie identification, which allows quantification of a certain degree of "zombieness". A general procedure to turn arbitrary binary classifications into fuzzy ones is also presented and is shown to successfully increase consistency between zombie definitions.

Key words: zombie firms, vulnerable firms *JEL codes:* L25, D22, D24, C55, O40

1 Introduction

The Japanese economic stagnation that started in the early 1990s brought about the notion of "zombie firms" in reference to companies that would normally exit functioning markets but manage nonetheless to survive, typically relying on subsidized credit (CABALLERO et al., 2008). Concerns around the potential "zombification" of euro area corporates has again become prominent in recent years, motivated by the extended accommodative credit environment, first in the wake of the European sovereign debt crisis in the 2010s and more recently following the extensive support measures put in place in response to the COVID-19 pandemic.

Despite the growing interest in the effects of accommodative financing conditions, and the risks to economic growth and productivity associated with a rise in zombie firms, the literature seems to lack a general agreement on how zombie firms should be identified. This is due to the fact that the defining feature of zombie firms (i.e., receiving subsidized credit) is usually not observable and identification methodologies have to rely on proxies instead. On the one hand, authors then employ ad hoc methodologies for identifying such non-viable firms, which might select different subsets of firms. On the other, the proliferation of

¹ Mingarelli and Wendelborn work at the European Central Bank; Shakir was at the European Central Bank until April 2023. The views expressed are those of the authors and not necessarily those of the institutions they are affiliated with.

studies has made the concept of zombie companies more evanescent – especially in the public debate – blurring the boundary between zombies and vulnerable firms.

In this article, we seek to reaffirm the distinction between the two, establishing conceptual order and providing a comparison and consistency assessment of some of the most prominent zombie identification methodologies. Such work is particularly important in the current context of post-pandemic recovery, where distinguishing between the notion of subsidized zombie firms and vulnerable, but fundamentally viable, firms is vital in order to understand the real effects and policy implications of the zombie phenomenon.

The remainder of this article is organized as follows. First, we provide a practical motivation for distinguishing between zombie firms and vulnerable firms. We do this by recalling a recent policy scenario in which an accurate determination of which firms should be labelled as non-viable could have made a substantial difference to the degree of credit and public resources being efficiently allocated in Europe. Then, we present a comparison of the three most popular zombie identification methodologies. We discuss the strengths and weaknesses of each methodology, and provide some insights into the factors that contribute to the comparability of different identification results. In the penultimate section, we discuss the benefits of turning identification can provide a more nuanced understanding of the degree to which a firm is a zombie, and that it can be used to improve the comparability of different identification results. Finally, we provide policy-relevant conclusions discussing the implications of our findings for economic policy.

2 A policy case scenario: Credit allocation during the COVID-19 pandemic

Early in the pandemic, the European Commission put forward guidelines for determining which firms should have access to loan guarantee schemes. These guidelines required firms to have reported EBITDA interest coverage (EBITDA IC) ratios greater than unity, and debt-to-equity ratios below 7.5 for both of the two most recent reporting years. Each country eventually put in place its own criteria, although these have by and large been in line with these Commission's guidelines.

Comparing the European Commission's criterion with the zombie identification of STORZ et al. (2017) on euro area firms shows that, while very few of the firms

labelled as viable (healthy) were excluded from the schemes (about 1%), policy measures intended to help viable companies bridge liquidity needs arising during the pandemic and lockdowns may also have been accessed by over 90% of firms labelled as zombies (see Figure 1).²

Figure 1: European Commission criterion for accessing loan guarantees schemes compared with the zombie identification proposed by STORZ et al. (2017)



Note: Each dot represents an individual firm.

This raises the question of whether the European Commission's criterion is an effective way of excluding zombie firms. The criterion is based on two financial ratios that are commonly used to assess a firm's financial health. However, these ratios do not take into account other factors that may be important in determining whether a firm is a zombie, such as its profitability, its investment activity, and its debt structure.

This critique may also be applied to many of the identification methodologies employed in the literature and policy space, and the Commission's criterion can be considered in and of itself a measure of firm viability. Because the status of zombie is not directly observable, the design of diverse methodologies, each with its pros and cons, aims at constructing proxies that are often driven by data

² Clearly, eligibility does not mean such firms necessarily accessed financial schemes, although evidence exists at the country-sector level of correlations between high fractions of non-viable firms and pick-ups in loan guarantees and moratoria (HELMERSSON et al., 2021).

availability and may emphasize different factors. The natural question arising is whether these proxies are consistent among each other, that is, whether they identify the same phenomenon and type of firms.

3 Zombie identifications: A new framework and consistency assessment

While the literature on zombie firms is rich in coexisting identification methodologies, it remains challenging to reconcile results and recommendations into a unified framework. Aside from the conceptual differences distinguishing different approaches, due to data limitations analyses are often conducted on different subsets of the economy, in specific geographies and sectors.

Although the methodologies each have clear advantages and disadvantages in depicting different aspects of zombieness, their heterogeneity in terms of time, sector, and country coverage, but also different underlying frameworks, makes it hard to perform a direct comparison, leaving the conceptual debate on the size, real effects, and policy implications of the zombie phenomenon open to misinterpretation. We attempt to bridge this gap by providing a generalized framework and replicating the main identifications on a common dataset of euro area countries over the period 2004–2019. We use firm-level data from Orbis, augmented with other data sources as needed, such as Bloomberg and the Centralized Securities Database (CSDB) for Tobin's Q calculation. In addition, as each methodology naturally restricts the sample to a specific subset of firms, we introduce the concept of *largest identifiable subset* (LIS), that is, the subset of firms on which a given identification (or set of identifications) can be applied.

We compare three of the most prominent identification methodologies introduced in recent years, namely, those by ADALET MCGOWAN et al. (2018), BANERJEE and HOFMANN (2020), and STORZ et al. (2017).³ While our cross-identification comparison shows some consistency in trends and levels of zombie firms in the economy, we take a step further to determine whether such methodologies actually identify the same subset of unviable firms. We start our analysis by first looking at a set of main firm characteristics for zombies/non-zombies for the identifications mentioned above (Figure 2).

³ For a more ample discussion and for more details, please see MINGARELLI et al. (2022). The identification criteria are as follows: for ADALET MCGOWAN et al. (2018), an interest coverage ratio less than one for at least three consecutive years and an age of at least ten years; for BANERJEE and HOFMANN (2020), an interest coverage ratio below unity and Tobin's q below sector median for at least two consecutive years; for STORZ et al. (2017) negative returns on assets, negative net investments, and debt servicing capacity below five percent, for at least two consecutive years.





Whiskers denote the 10th and 90th percentiles. Dashed lines show the distributions for the entire sample of firms. AAM18: Adalet McGowan et al. (2018), BH20: Banerjee and Hofmann (2020), SKSW17: Storz et al. (2017).

The distributions depicted in Figure 1 show a number of commonalities, but also important difference between methodologies, explained by the different criteria used by each. Across all methods, zombies tend to have (i) lower turnover, (ii) lower productivity, but also (iii) lower and often negative returns on assets than their non-zombie peers. Negative return on assets is hardwired into the identification put forward by STORZ et al. (2017), but lower ratios are also observed for the other two identifications. The LIS associated to the identification of BANERJEE and HOFMANN (2020) is structurally different than the other two methods as it can be applied to listed firms only. As expected, these listed firms are larger in terms of total asset and have higher turnover, but lower total factor productivity (TFP). They have similar median returns on assets, and not such large differences in leverage between zombies and non-zombies compared to other identifications.

Secondly, we look at how firm-level identifiers overlap across zombie identifications (Figure 3). For this analysis, we make results comparable by selecting a common sample of firms corresponding to the joint LIS of all three methods. Figure 3a shows that firms jointly identified as zombies by different methods are relatively few. These results leave open the question of the ability of different methodologies, on one hand, to generalize their empirical findings, and on the other to establish with certainty the overall level of zombie firms in the economy. Moreover, these results raise the concern of whether these methods

actually capture zombie characteristics in firms (i.e., whether the firms receive subsidized credit) or simply detect financially weak and less profitable firms.



Figure 3: Venn diagrams representing the overlaps between a selection of

AAM18 = ADALET McGOWAN et al. (2018); BH20 = BANERJEE and HOFMANN (2020); SKSW17 = STORZ et al. (2017). Identification is performed over a common set of firms. Numbers labelling each area refer to the share of firms (in percentage) with respect to all firms identified as zombie by any of the three methods. Left: overlap of zombie firms identified using binary classification, i.e., a firm is either a zombie or nonzombie. Right: overlap of fuzzy identified groups, i.e.,, a firm is a zombie to a certain degree.

4 From a binary classification to a generalized *fuzzy* approach

An improvement can be made by moving away from the dichotomic, crisp classification of zombie firms and recognising that the very concept of zombies is not clear-cut, but rather can be associated with a certain degree of zombieness. For example, using a binary identification when analysing firms exiting zombie status might suggest that these have fully recovered, while their performance might simply have improved just slightly by the amount necessary to exceed the zombie threshold. In fact, our analysis shows that recent declines in the share of zombies have not always been met with a similar decline in quasi-zombies. The introduction of a *fuzzy*, non-binary identification proves to be more robust to misclassification and allows us to describe the degree of a firm's viability, improving the inevitable arbitrariness of the identification thresholds used in the literature. As such, we draw on the work of CABALLERO et al. (2008) and provide a generalized framework which allows us to turn each existing binary identification into a fuzzy one, with the two-fold advantage of not requiring any extra data and adding only minimal computational complexity.
We perform a similar comparison to the one presented in the previous section and find that introducing fuzziness increases consistency across different definitions (Figure 3). While fuzzy identifications have the drawback of being less conservative, with the risk of potentially including firms that are not actual zombies, this concern is mitigated by associating decreasing importance to such first-kind errors. On the other hand, reducing the likelihood of missing out firms that are potentially unviable increases consistency across identifications, allowing for a better comparison and generalization of results. Figure 3b shows that the overlap between the three identification methods increases when compared to the binary example (Figure 3a).

In addition to ensuring consistency and comparability, a fuzzy analysis allows for an assessment of how firms evolve from their current status to another status of zombie, quasi-zombie and non-zombie. Using the definition provided by STORZ et al. (2017), we started an analysis of the probabilities of transitioning from one status to another for the period 2014–2015 and find that most recovering zombies or quasi-zombies gradually attain healthy status, while those that did not experience an improvement progressed towards a deeper level of zombieness. Moreover, firms with a high fuzzy score were more likely to remain in their (quasi-)zombie status, while firms with lower scores had a higher probability of recovering.

5 Conclusion

With the introduction of a general framework formalising the concept of binary zombie-identifications, we compare the main methodologies and highlight their heterogeneity both at a conceptual and quantitative level. Although the shares and trends of zombies are somewhat consistent between methods, we find that they are identified using different subsets of the population of firms.

Consistency improves when using a generalized fuzzy-theoretic approach, which has the advantage of providing a more granular measure of zombieness, decreasing the arbitrariness in choosing thresholds, and informing on the evolution in the shares and trends of zombies, quasi-zombies, and non-zombies. In turn, such an approach allows for a better comparison between different identifications, but does not rule out a mismatch between the conceptual notion of a zombie and the different methodologies for their actual identification. As such, generalizations of findings as well as the design of targeted policy responses should be conducted with caution.

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Comment on "On the identification of zombie firms" by Luca Mingarelli, Jonas Wendelborn, and Tamarah Shakir

Felix Reitz¹ University of St. Gallen

The research presented by LUCA MINGARELLI, JONAS WENDELBORN, and TAMARAH SHAKIR delves into the pertinent issue of identifying zombie firms, shedding light on the challenges and intricacies involved in this task. Their study addresses important questions and the empirical example used – credit allocation during the COVID-19 pandemic – substantiates its relevance and timeliness. In this commentary, I critically assess the strengths and limitations of the proposed fuzzy zombie identification methodology, which quantifies the extent of firms' zombieness.

The authors aptly highlight the issue that even widely employed zombie definitions identify different subsets of the economy as zombies. In response to this challenge, they introduce a fuzzy zombie identification methodology as an innovative solution. This methodology offers at least two vital benefits over the traditional approach. Firstly, it enhances the consistency across different definitions, thereby facilitating better comparison and generalization of results. Secondly, by assigning a degree of zombieness to a given firm, it enables a more nuanced tracking of the firm's financial evolution over time. Collectively, these aspects represent a notable improvement over binary zombie identification methodologies.

However, the present study can be criticized from three angles. One of the reasons the term "zombie firm" gained widespread recognition is its parsimony. It does not necessitate an economics degree to grasp that firms receiving subsidized credit and having an interest coverage ratio below unity are in a precarious financial situation. Introducing a fuzzy zombie classification may indeed provide a wealth of information about the firms under scrutiny, but this comes at a cost. The concept may become less accessible to a broader audience due to its heightened methodological complexity, which could potentially dilute its effectiveness as a policy tool.

The authors also highlight the arbitrary nature of the cut-off points in binary zombie definitions, exemplified by the question of why ten-year-old firms

¹ The views expressed are those of the author and not necessarily those of the institution he is affiliated with.

are classified as zombies while their nine-year-old counterparts are excluded (ADALET MCGOWAN et al., 2018). While researchers have put substantial effort into substantiating their zombie definitions, they remain vulnerable to criticism. Yet, the same criticism can be applied to fuzzy zombie definitions. The authors do not offer guidance on how to establish upper and lower thresholds when implementing a fuzzy zombie definition.

Furthermore, the authors aim to reiterate the distinction between the "zombie" concept and vulnerable firms. The problem with their solution, a fuzzy zombie identification methodology, is that it is very similar to, but has no advantages over, established models of financial distress, for example, bankruptcy prediction models such as Altman's Z-score. This raises the question of why, in the context of firms' access to loan guarantees during the COVID-19 crisis, the analysis could not have been conducted using a bankruptcy prediction model. These models have been around for decades and reliably enable researchers to assess the level of firms' financial distress and to compare it to other firms. If a sophisticated methodology is required to estimate a firm's degree of viability, it prompts the question of why not revert to a financial distress model that has a proven track record.

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When companies don't die: Analyzing zombie firms in a low interest rate environment

Angela De Martiis¹ and Franziska J. Peter University of Bern; Zeppelin University

We examine whether low interest rates foster non-viable firms in Europe by analyzing two classes of firms: zombies and distressed. Controlling for the business cycle and recession periods, we find a significantly negative effect of short-term rates on the likelihood of being a zombie, while no effect for distressed firms is detected. A decrease in inflation and a lower state of the business cycle is associated with a rise in both zombies and distressed firms. Examining a non-conventional monetary policy program, we find no evidence of credit misallocation. Therefore, concurring monetary and macroeconomic phenomena likely explain the presence of non-viable firms, although with dissimilarities between zombies and distressed firms.

Key words: zombie firms, distressed firms, monetary policy, business cycle *JEL codes:* D22, E32, E43, E52, G33

1 Introduction

With the COVID-19 pandemic, a series of government measures put into place to support struggling businesses might have allowed otherwise insolvent borrowers to remain alive. Following the pandemic containment measures, a reduction in the number of bankruptcies was recorded in Europe.² The crisis highlights the importance of monitoring and analyzing the presence of non-viable firms kept afloat by public support schemes and bank lending activities (LAEVEN et al., 2020).

The rising numbers of zombie firms (BANERJEE and HOFMANN, 2022) have been associated with excessive levels of corporate debt (JORDA et al., 2022), lax monetary policies (ACHARYA et al., 2019), low interest rates (BANERJEE and HOFMANN, 2018), and erroneous bank lending behaviors (CABALLERO et al. 2008).

We contribute to the literature by using the Compustat Global Fundamentals database to examine the link between monetary policy and non-viable listed firms in eight European countries. We thereby investigate the link between short-term interest rates and non-viable firm status in general as well as in relation to a specific policy measure, that is, the reaction of non-viable firms following the announcement of the ECB's Corporate Sector Purchase Program (CSPP). To complement a silent literature, we expand our analysis to capture not only zombie

¹ Corresponding author (email: angela.demartiis@gmail.com).

² Source: Eurostat (https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20201104-2).

firms but also distressed firms, in order to observe potential differences in their reactions.

Since the implementation of monetary policy measures coincidences with recession periods, we augment our analysis by considering two business cycle indicators – GDP growth and the composite leading indicator $(CLI)^3$ – to examine their impact on the status of non-viable firms. We complement this empirical analysis by highlighting the effect of specific recession events capturing three economic downturns – the dot-com bubble, the Global Financial Crisis, and the Debt Crisis⁴ – to understand the distinctive effects on non-viable firms' status.

Considering the impact of monetary policy, proxied by the short-term interest rate, our results indicate a negative and significant effect of short-term rates on the likelihood of being classified as a zombie firm, supporting the argument that low interest rates could constitute a favorable environment for zombie firms' survival (BANERJEE and HOFMANN, 2018). This result, however, is not confirmed for the class of distressed firms. This might be explained by the unique features of zombie firms as insolvent borrowers kept alive by subsidized bank credit (CABALLERO et al., 2008; HOSHI, 2006). The results of the examination of the announcement of the CSPP show a significant decrease in zombie and distressed firm status following the announcement of the program. However, at the same time, we find no evidence of misallocation of subsidies to zombies and distressed firms within this specific program.

Our results based on the Consumer Price Index (CPI), as an inflation measure, and the business cycle measures indicate that an increase in inflation decreases the likelihood of zombie and distressed firm status, consistent with earlier work (Bhamra et al., 2018; Acharya et al., 2023). We also document a negative and highly significant effect of GDP growth on zombie and distressed firm status. Finally, the results suggest that the probability of zombie status is significantly positively affected by recession periods following the burst of the dot-com bubble, the Global Financial Crisis, and the Debt Crisis.

Overall, this study suggests that zombies and distressed firms exhibit a different reaction to a low interest rate environment, and that this monetary policy alone is likely not the main driver of non-viable firms' survival. Rather, concurring phenomena related to the business cycle and inflation expectations can explain the presence of non-viable firms.

³ The CLI is an indicator designed to provide early signals of turning points in business cycles showing fluctuations of the economic activity around its long-term potential level (OECD, 2020).

⁴ Dot-com bubble refers to the years 2000-2001, Global Financial Crisis to 2008-2009, and Debt Crisis to 2011-2012.



Figure 1: Zombie firms, distressed firms, and short-term interest rates

Note:

The graph plots the shares of zombie firms, black line, of distressed firms, dashed line, and short-term interest rates, gray line. We define zombie firms following BANERJEE and HOFMANN (2018) and distressed firms following ALTMAN (1968). The short-term interest rates are used as a measure of the European single monetary policy and are based on three-month money market rates.

Source:

Authors' projections on Compustat Global and OECD data.

2 Measuring non-viable firms

We use Compustat Global to collect financial and market data on active and inactive publicly traded companies. We restrict the sample to a set of European countries for which coverage is optimal and match Thomson Reuters Datastream firm ratings with Compustat firm-level data to identify a treatment and control group before the announcement of the ECB's Corporate Sector Purchase Program.

We remove observations with missing company unique identifiers or missing information on fiscal year and drop all firm-year duplicates. To mitigate the effect of outliers, we winsorize variables at the 1st and 99th percentiles year-byyear. At the industry level, we use the GIC group based on the global industry classification standard (GICS) developed by the S&P Dow Jones Indices and the MSCI to identify 22 industries. We exclude companies in the utilities, financial, insurance, and banking industries (ACHARYA et al., 2019; 2023). The final sample consists of listed firms from eight European countries – Italy, Spain, Greece, France, Germany, Austria, the Netherlands, and Belgium – over the period 1990–2018.

Considering interest rates, inflation, and business cycle indicators, we use data on short-term and long-term interest rates, inflation, and the CLI from the OECD and real GDP growth from the World Bank.

Following BANERJEE and HOFMANN (2018; 2022), we define a zombie firm as an unproductive firm that is unable to cover its debt servicing costs from its current profits over an extended period of time. In line with this definition, BANERJEE and HOFMANN (2018) classify a firm as zombie if its interest coverage ratio is below one for three consecutive years and its Tobin's q is below median within the sector and year.

To capture non-viable firms beyond the classification of zombie firms, we extend our analysis to distressed firms following the corporate finance literature on firm default. The measure used to identify distressed firms follows Altman (1968) Z-score, which represents a proxy for bankruptcy risk. A Z-score greater than 2.99 signals financial soundness, a score below 1.81 indicates financial distress, and a score between 1.81 and 2.99 represents the gray area.

We monitor firms over the period 1990–2018 and assign them to three categories: zombies, distressed and healthy. A total of 4,499 firms are classified as zombies over this period. Of these, 183 are located in Austria, 169 in Belgium, 1,485 in Germany, 239 in Spain, 1,200 in France, 598 in Greece, 460 in Italy, and 165 in the Netherlands. Figure 2 shows the trend of healthy (gray line), zombies (black line) and distressed (dashed line) firms. The line for distressed firms shows a downward trend, while healthy firms display an upward trend. In our sample, 17,170 firms are classified as healthy (those that are never zombies and with a Z-score above 2.99), while 15,244 are classified as distressed (see Figure 2).



Figure 2: Share of zombies, distressed, and healthy firms

The graph shows the share of zombies, healthy, and distressed firms by country and year. A firm is classified as zombie if its interest coverage ratio is below one for three consecutive years and its Tobin's q is below median (BANERJEE and HOFMANN 2018). A firm is classified as healthy if it has never been a zombie and has a Z-score above 2.99 (Altman 1968). Distressed firms are identified following (ALTMAN 1968).

Source:

Note:

Authors' projections on Compustat Global data.

Table 1 reports the descriptive statistics for firm-level variables. Zombie firms fall behind their healthy peers in a number of features: they show higher leverage, higher tangible assets, negative return on equity, and negative profit margins, operating profit and EBIT ICR. They are also smaller and have lower capital and research and development expenditures. Distressed firms report higher leverage and net leverage and higher asset tangibility with respect to the zombie firms, but at the same time they have positive returns on equity, profit margins, operating profit, and EBIT ICR. Distressed firms are also larger in size compared to zombie firms, and have higher capital expenditures. Altogether, we see that zombie firms have specific features that make them differ from other types of firms (DE MARTIIS et al., 2023)

	Healthy	Zombie	Non-Zombies	Distressed
Leverage	0.116	0.271	0.199	0.308
Asset Tangibility	0.139	0.175	0.190	0.246
Cash & ST Invest. Ratio	0.125	0.071	0.090	0.064
Return on Equity	0.111	-0.153	0.087	0.032
Profit Margin	0.047	-0.137	0.034	0.007
Operating Profit	0.119	-0.016	0.102	0.066
Capex Ratio	0.036	0.020	0.037	0.031
R&D Ratio	0.037	0.061	0.025	0.018
EBIT ICR	7.787	-3.529	4.320	1.534
Total Assets (Changes)	0.055	-0.070	0.041	0.012
Size Log(Tot. Assets)	4.745	4.201	5.590	6.035

 Table 1:
 Statistics on healthy firms, zombies, non-zombies, and distressed firms

Note:

The table presents descriptive statistics for healthy, zombies, non-zombies, and distressed firms. Healthy companies are those that are never zombie in the entire period of observation and with a Z-score above 2.99 (ALTMAN 1968). Zombie is a binary variable that takes a value of one if its interest coverage ratio is below one for at least three consecutive years and its Tobin's q is below the median within its sector and year (BANERJEE and HOFMANN 2018). Non-zombies are those equal to zero. Distressed firms are identified using the Z-score measure (ALTMAN 1968). Median values are reported. Authors' calculations on Compustat Global data.

Source:

3 Monetary policy and non-viable firms

To analyze the effect of monetary policy on the status of non-viable firms, we conduct logistic regressions of zombie and distressed status, respectively, on short-term interest rates, controlling for profit margin, negative income, leverage, and firm size. We then examine the relationship of inflation as well as the effect of the announcement of, and actual participation in, the CSPP on zombie and distressed firm status.

3.1 Interest rates and inflation

Previous studies suggest a negative link between interest rates and zombie status, supporting the rationale that very low interest rates for long allow low-productivity firms to stay in business. The results of logistic regressions including short-term interest rates are presented in Table 2. Regression (1) in Panel A reports the results on zombie firms and shows a negative and significant effect of short-term rates on the probability of zombie status.

Panel A: Zombies	(1)	(2)
Short-Term Interest Rates	-1.007*	
	(0.567)	
Consumer Price Index		-0.192***
		(0.043)
Profit Margin	-0.062***	-0.063***
	(0.019)	(0.018)
Negative Income	2.309***	2.301***
	(0.070)	(0.069)
Leverage 1	2.586***	2.551***
	(0.201)	(0.201)
Log(Tot. Assets)	-0.369***	-0.370***
	(0.024)	(0.024)
Ν	25,439	25,439
<i>R</i> ²	0.317	0.318
Panel B: Distressed	(1)	(2)
Short-Term Interest Rates	-0.143*	
	(0.078)	
Consumer Price Index		-0.112***
		(0.033)
Profit Margin	-0.004	-0.005
	(0.008)	(0.008)
Negative Income	1.030***	1.021***
	(0.052)	(0.052)
Leverage 1	4.006***	4.003***
	(0.198)	(0.199)
Log(Tot. Assets)	0.130***	0.219***
	(0.019)	(0.019)
Year FE	1	1
Industry FE	1	✓ ✓
Country FE	1	1
N	25,546	25,546
R ²	0.182	0.183

Table 2: Zombie firms, distressed firms, short-term interest rates, and inflation

Note:

The table presents logistic regressions. The dependent variable is a binary variable equal to 1 if a firm is classified as zombie (Panel A) or distressed (Panel B), and 0 otherwise. A firm is classified as zombie following BANERJEE and HOFMANN (2018) and as distressed following ALTMAN (1968). Among the firm controls: profit margin is computed as net income over sales, negative income is an indicator variable that equals one whenever the return on equity is negative, size is the log of total assets, and leverage is the sum of long-term debt and debt in current liabilities divided by total assets. Standard errors clustered at firm-level. * p < 0.1, ** p < 0.05, *** p < 0.01.

We observe a significant negative effect at the 90% confidence level (p<0.1). This result supports the argument that low interest rates potentially extend the evergreening of loans, or at least constitute a favorable environment for zombie firms, corroborating the findings on zombie firms (BANERJEE and HOFMANN, 2018) and low-productivity firms (HAMANO and ZANETTI, 2022).

With respect to the results on distressed status probability in Panel B, we also find a marginally significant negative effect. This result is counter intuitive, as higher interest rates are argued to worsen the debt burden of companies, thereby increasing their likelihood of financial distress. However, when including business cycle-related variables, such as GDP growth, the CLI and recession dummies (see Table 3), the effect becomes insignificant for distressed firms (Regression (4)) but remains significant for zombie firms (Regression (2)).

Turning to the effect of inflation on non-viable firms, the coefficient on the CPI, which is a widely used measure of inflation observed by policy-makers, is negative and significant for distressed and zombie firms (Regression (2) in Panels A and B of Table 2).

The findings suggest that an increase in inflation (CPI) decreases the probability of a firm being classified as non-viable. This relationship is confirmed by the strand of literature examining the link between inflation and equity valuations. BHAMRA et al. (2018) show that corporate defaults spike during times of low inflation and illustrate a strong negative relationship between expected inflation and quarterly corporate defaults in the United States between 1970 and 2016. With respect to zombie-like companies, using firm-level data from a set of European countries over the period 2012–2016, ACHARYA et al. (2023) document that markets that experience an increase in zombie firms subsequently have lower inflation growth compared to markets that have a lower zombie prevalence.

Controlling for business cycles by including GDP growth as well as the CLI, and for recession periods, Table 3 reveals a significant negative link between GDP growth and non-viable status that is more pronounced for zombie firms than for distressed firms. In contrast to distressed firms, zombie firms are also found to be significantly linked to two of the three recession dummies.

	Zombies		Distressed		
	(1)	(2)	(3)	(4)	
Composite Leading Indicator	0.078***	0.080**	0.032**	-0.010	
	(0.025)	(0.036)	(0.015)	(0.020)	
GDP Growth	-0.113***	-0.096***	-0.042***	-0.043**	
	(0.018)	(0.025)	(0.012)	(0.017)	
Dot-com Bubble	-1.703***	5.687**	0.625***	-0.716	
	(0.488)	(2.816)	(0.201)	(0.586)	
Financial Crisis	-3.481***	1.472	1.321***	-0.405	
	(0.774)	(1.000)	(0.306)	(0.796)	
Debt Crisis	-2.847***	1.700***	1.322***	-0.345	
	(0.804)	(0.600)	(0.284)	(0.813)	
Short-Term Rates	-0.311***	-1.013*	0.105***	-0.085	
	(0.089)	(0.613)	(0.025)	(0.074)	
Long-Term Rates	0.049***	0.018	0.076***	0.025	
	(0.015)	(0.018)	(0.016)	(0.018)	
Consumer Price Index	-0.247***	-0.195***	-0.086***	-0.092*	
	(0.037)	(0.049)	(0.025)	(0.036)	
Firm Controls		1		1	
Year FE	1	1	1	1	
Industry FE	1	1	1	1	
Country FE	1	1	1	1	
N	41,833	25,438	41,833	25,545	
R^2	0.072	0.321	0.070	0.184	

Table 3:Zombie firms, distressed firms, business cycle indicators, and
recession events

Note:

The table presents logistic regressions. The dependent variable is a binary variable equal to 1 if a company is a zombie (Models 1 and 2) or distressed (Models 3 and 4). A company is classified as zombie following BANERIEE and HOFMANN (2018) and as distressed following ALTMAN (1968) Z-score. The Composite Leading Indicator signals turning points in the business cycle. GDP growth refers to real growth rates. Short-term rates relate to 3-month money market rates,⁵ while long-term rates refer to government bonds maturing in 10 years. Dot-com bubble (2000-2001), financial crisis (2008-2009), and debt crisis (2011-2012) are dummies for recession events. Standard errors are clustered at firm-level. * p < 0.1, ** p < 0.05, *** p < 0.01

Taken together, these findings indicate that zombification is a phenomenon that is aggravated by recession events. However, in contrast to distressed firms, due to the financial assistance they receive from their banking counterparts (CABALLERO et al., 2008), zombies are vulnerable firms that are in financial difficulty for a prolonged period of time. Recessions may very well be the primary cause of firms

⁵ Source: OECD (https://doi.org/10.1787/2cc37d77-en).

becoming overindebted, but they can hardly explain why these companies stay alive despite their inability to cover their debts. Consequently, it is more likely that measures and packages – monetary or otherwise – put in place to ease the burden of the economic crisis allow these firms to stay afloat.

3.2 Non-conventional monetary policy

To gain more insights into the direct and indirect effects of monetary policy, we analyze a specific non-conventional monetary policy program, namely, the Corporate Sector Purchase Program, which forms part of the ECB's Asset Purchase Program. Its objective was to ease the financing conditions in the real economy and consists of purchases of investment-grade euro-denominated bonds implemented by the Eurosystem (DE SANTIS et al., 2018).

Between June 2016 and December 2018, the Eurosystem conducted net purchases of corporate sector bonds under the CSPP. Outright purchases of investmentgrade bonds were implemented by six Eurosystem national central banks: the Bank of Belgium, Deutsche Bundesbank, the Bank of Spain, the Bank of France, the Bank of Finland, and the Bank of Italy. Summaries of the requirements to qualify for the purchases are given in GROSSE-RUESCHKAMP et al. (2019) and DE SANTIS et al. (2018).

The CSPP was announced in March 2016 and the purchases started in June 2016. We use the *announcement* of the CSPP, in a difference-in-differences (DiD) framework, as a signal to examine the reaction of non-viable firm status, both zombie and distressed, in a sample of eight European countries. In the vein of GROSSE-RUESCHKAMP et al. (2019), we base our analysis on the eligibility of the investment-grade euro-denominated bonds prior to the announcement of the CSPP. Our treatment group is composed of public companies that have an investment-grade rating, while the control group is composed of non-eligible public companies (i.e., those firms that are non-investment grade rated).

We conduct a DiD analysis by running the following model:

$$Pr(Status_{it} = 1) = \beta_1 Post \ CSPP_t + \beta_2 Treated_i + \beta_3 Post \ CSPP \times Treated_{it} + \beta_4 X'_{it}$$
(1)
+ $\theta_h + \rho_c + \gamma_i + \varepsilon_{it}$

where *Status_{it}* is the probability of company *i* in year *t* being a zombie or distressed; *Post CSPP_t* is an indicator variable that is equal to one whenever the fiscal year is after 2016 (i.e., after the announcement of the CSPP) and zero otherwise; *Treated_i* is equal to one whenever the company is included in the treatment group as an investment-grade public company and zero otherwise; and *Post CSPP* × *Treated_{it}* is the difference-in-difference estimator capturing the treatment effect for company *i* in year *t*. The matrix *X* captures firm-specific characteristics such as size, leverage, and profitability. The latter enter the regression with one year lag. Industry fixed effects, θ_h , country fixed effects, ρ_c , and year fixed effects, γ_j are included in all specifications.

Panel A: Zombies	(1)	(2)	(3)	(4)
Post CSPP×Treated	-1.766***	-1.717***	-1.717***	0.291
	(0.448)	(0.498)	(0.498)	(0.501)
Post CSPP			-1.224***	-1.317***
			(0.232)	(0.230)
Treated				-2.085***
				(0.338)
Ν	41,965	25,439	25,439	25,439
R ²	0.058	0.280	0.280	0.288
	(4)			(4)
Panel B: Distressed	(1)	(2)	(3)	(4)
Post CSPP×Treated	0.500***	0.458***	0.458***	-0.040
	(0.172)	(0.190)	(0.190)	(0.158)
Post CSPP			-1.107***	-0.950**
			(0.409)	(0.411)
Treated				0.528***
				(0.160)
Firm controls		1	1	1
Year FE	1	1	1	1
Industry FE	1	1	1	1
Country FE	1	1	1	1
Ν	41,965	25,546	25,546	25,546
R ²	0.067	0.174	0.174	0.177

Note:

,

The table presents DiD regressions. The dependent variable is a binary variable that is equal to 1 if a company is classified as zombie (Panel A) or as distressed (Panel B), and 0 otherwise. A company is classified as zombie following BANERJEE and HOFMANN (2018) and distressed following ALTMAN (1968) Z-score measure. The treatment group is composed of public companies that have an investment-grade rating, while the control group is composed of non-eligible public companies that are non-rated. Ratings information are in line with the minimum requirement of credit assessment of credit quality, BBB-/Baa3/BBBL, from at least one agency among Standard & Poor's, Moody's, Fitch Ratings or DBRS. Standard errors clustered at firm-level. * p < 0.1, ** p < 0.05, *** p < 0.01

The results are given in Table 4 and show a significant decrease in distressed and zombie status post-CSPP. However, the DiD estimator turns insignificant when we include the Treatment and Post-Treatment dummies. Consequently, we do not observe a significant effect of this specific program on zombie and distressed status, which might also be interpreted as no evidence of misallocation of credit towards zombie firms within the CSPP.

4 Conclusion

Focusing on two categories of non-viable firms – zombies and distressed – in eight European countries, this study examines whether the concurrence of low interest rates, a lower state of the business cycle, and recession periods might explain the presence of non-viable firms.

The empirical analysis validates the argument that long-lasting lower rates could be a breeding ground for zombie firms in particular. At the same time, exploiting the announcement of a non-conventional monetary policy program, we find no clear evidence of credit misallocation to non-viable firms. We find a significant decrease in zombie and distressed firm status following the announcement of the program. These effects suggest that in the presence of financial market imperfections, only viable firms are able to respond to lower borrowing costs and increase their capital stock. A direct effect of specific policies, or economic variables, on the zombie share is challenging to identify, however, as zombie firms are classified based on their persistent non-profitability. Further research could therefore focus on the time series dynamics.

Overall, the results underscore that in a low interest rate environment, the prevalence of zombie firms tends to increase, but this trend is not entirely driven by accommodative monetary policy measures. In periods of low inflation during recessions, lenders tend to support otherwise insolvent borrowers more.

This indirect effect, with the existence of offsetting channels, suggests new ways in which persistent low rates can affect the status of non-viable firms. The weight of such concurring factors, together with the separation of zombie firms from other non-viable firms such as distressed firms, should be considered by policy-makers when monitoring the dynamics of zombie firms during and after crisis periods, and when designing policies that, indirectly, target firms in need of support.

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Appendix

A.1 Descriptive statistics

	Ν	Mean	Median	SD	Min	Max
Leverage 1	42232	0.231	0.205	0.195	0.000	1.659
Leverage 2	42309	0.601	0.604	0.246	0.040	2.532
Net leverage	42231	0.088	0.108	0.293	-0.836	1.462
Asset Tangibility	42302	0.234	0.189	0.198	0.000	0.900
Cash & ST Invest. Ratio	42307	0.144	0.088	0.160	0.000	0.915
Return on Equity	28491	0.016	0.075	2.044	-12.262	150.369
Profit Margin	28257	-0.195	0.027	2.758	-39.624	168.872
Operating Profit	42163	0.076	0.093	0.147	-0.994	0.498
Capex Ratio	34234	0.050	0.035	0.053	-0.064	0.442
Ebit ICR	40543	16.594	3.437	133.935	-969.273	2202.786
Total Assets (Changes)	42259	5.761	0.032	104.988	-1.000	5597.776
Size Log(Tot. Assets)	42327	5.764	5.413	2.656	-0.358	16.278
Size Log(Nr. Employees)	29743	0.291	0.219	2.067	-5.809	5.443

 Table A1:
 Firm performance measures

Note:

The table reports descriptive statistics of a selection of firm performance measures used to describe zombie, healthy, and distressed firms. Leverage 1 is the sum of long- term debt and debt in current liabilities divided by total assets, leverage 2 is total liabilities over total assets, net leverage is the sum of long-term debt and debt in current liabilities minus cash and short-term investments divided by total assets, asset tangibility is property, plant and equipment divided by total assets, cash & ST investment ratio is cash and short-term investments divided by total assets, roe is net income over common equity, profit margin is computed as net income over sales, operating profit is EBITDA over total assets, capex ratio is capital expenditures over total assets changes is the change in total assets, size is either the log of total assets or log of number of employees.

Variable	Description	Source
Zombies	ICR<1 for 3 yr. & Tobin's q below median	Compustat,
(Banerjee and Hofmann 2018)	within sector-year	Datastream
Distressed	1.2×WCap./TA+1.4×RetEarn/TA	Compustat
(Altman 1968)	+3.3×EBIT/TA+0.6×ME/TL+Sales/TA	
Composite Leading Indicator	Composite of a number of indicators that	OECD
	provide indication of the cycle evolution	
GDP Growth	Real GDP Growth (%)	World Bank
Short-Term Rates	Averages of daily rates (%)	OECD
	Three-month money market rates	
Long-Term Rates	Averages of daily rates (%)	OECD
	Government bonds maturing in 10 years	
Consumer Price Index	Annual growth rate (%)	OECD
Post CSPP	= 1 if fiscal year post 2016	Compustat
Treated	= 1 if firm is in treatment group as investment-	Compustat,
	grade public firm	Datastream

Table A2:Definition of variables

Note:

The table describes the variables used in the empirical analysis, their respective identification and data sources. "Compustat" is the Standard & Poor's Compustat database. "Datastream" is Thomson Reuters database. "OECD" is the Organization for Economic Cooperation and Development database. "World Bank" is the World Bank's database.

	Code	Zombies	Distressed	Healthy
Energy	1010	68	391	417
Materials	1510	364	1,862	1,254
Capital Goods	2010	631	2,837	2,452
Commercial Services	2020	184	632	970
Transportation	2030	176	926	548
Automobiles & Components	2510	58	541	438
Consumer Durables & Apparel	2520	409	1,005	1,445
Hotels, Restaurants & Leisure	2530	128	609	417
Media Services	2540	125	373	377
Retailing	2550	51	97	156
Food and Staples Retailing	3010	5	9	10
Food, Beverage & Tobacco	3020	265	1,222	923
Household & Personal Products	3030	16	86	258
Healthcare	3510	214	599	735
Pharmaceuticals	3520	410	476	895
Real Estate	4040	5	98	41
Software	4510	538	1,130	2,756
Technology	4520	224	551	1,131
Semiconductors Equipment	4530	82	159	389
Telecommunication	5010	123	371	373
Entertainment	5020	277	867	911

 Table A3:
 Zombie firms, distressed firms, and healthy firms by industry

Note:

The table presents descriptive statistics by industry classification. The industry code used refers to the GIC group, Compustat item group, which is based on the global industry classification standard (GICS) and developed by the S&P Dow Jones Indices and the MSCI.

Source:

Author's calculations on Compustat data.

Figure A1: Zombie shares and GDP growth



The graph plots the share of zombies (black line) and GDP growth (red line). We identify zombie firms following Banerjee and Hofmann (2018).

Source:

Note:

Authors' projections on Compustat and World Bank data.



Figure A2: Zombie shares and short-term rates

Note:

Source:

This graph plots the share of zombies (black line) and the short-term rates (black dashed line). We identify zombie firms following BANERJEE and HOFMANN (2018). Authors' projections on Compustat and OECD data.

Figure A3: Zombie shares and inflation



Note:

Source:

This graph plots the share of zombies (black line) and CPI inflation (CPI) (black dashed line). We identify zombie firms following Banerjee and Hofmann (2018). Authors' projections on Compustat and OECD data.

Comment on "When Companies Don't Die: Analyzing Zombie Firms in a Low Interest Rate Environment" by Angela De Martiis and Franziska J. Peter

Johannes Binswanger University of St. Gallen

There has been much discussion of whether the extended period of ultra-low interest rates following the Great Financial Crisis and the Euro Crisis created a surge in zombie firms. The debate was particularly active in "Northern" euro area countries, where the dominant view has been that the European Central Bank (ECB), by creating zombie firms, would cause a significant misallocation of resources away from their most productive use into zombie projects that could only survive because of artificially low interest rates. In their paper, ANGELA DE MARTIIS and FRANZISKA PETER shed light on this debate by analyzing data from eight euro area countries - Italy, Spain, Greece, France, Germany, Austria, the Netherlands, and Belgium – over the period 1990–2018. They consider patterns of association between low interest rates and the prevalence of zombie firms. Moreover, they investigate how the population of zombie firms developed in reaction to the ECB's Corporate Sector Purchase Program (CSPP). Under this program, the ECB directly purchased investment-grade corporate bonds from eligible non-financial corporations. The authors form a comparison group that was not eligible for the program and compare whether the share of zombie firms developed differently among eligible and non-eligible firms.

The question of whether firms in financial difficulties can survive for longer in a low interest rate environment is quintessentially embedded into macroeconomics. The macroeconomic system is highly complex and arguably full of feedback effects. This is an important reason why macroeconomic analysis is usually embedded into equilibrium frameworks. In the present context, this especially concerns the question of whether low interest rates are indeed "caused" by central banks, or rather represent an endogenous (and maybe even "optimal") response to the state of the economy. It is noteworthy that, in the data, we do not observe a counterfactual world where interest rates were low or high without the intervention of a central bank, or a euro crisis where a counterfactual ECB did not lower interest rates or even increased them. Therefore, our ability to draw clear-cut conclusions from the data is limited. What is more, making the ECB responsible for low interest rates also means taking the position that central banks can indeed influence (short- and longer-term) interest rates. This view is debated; an illuminating review can be found in FABO et al. (2021).

This notwithstanding, it is often also interesting, and complementary, to consider simpler correlational patterns. They are more accessible, sometimes more transparent, and are open to interpretation by different models. By contrast, structural estimations from equilibrium models often require adopting a particular view on how the economy works. Nevertheless, one has to keep in mind that we should not jump too quickly to causal conclusions such as "the ECB caused the population of zombie firms to surge." I suggest reading the paper with a more Bayesian mindset. To illustrate, let us assume that we adopt a "Northern European prior" that the ECB indeed led to an increase in zombie firms. We can then ask whether the analysis of DE MARTIIS and PETER is consistent with this view.

Analysis based on cross-sectional logistic regressions shows that low interest rates are indeed associated with a higher likelihood of a firm being a zombie. This reinforces the "Northern prior". However, the results based on the CSPP show no statistical significance (at least for the proper specification where treatment and post-treatment dummy variables are included). This observation runs against the "Northern prior". In sum, to me, the study suggests that we should not (yet?) put too much confidence in the view that "central banks' ultra-low interest rates caused zombies." Neither do we have clear evidence that central banks were responsible for the ultra-low interest rates (rather than a "savings glut" and aging populations).

An interesting aspect of the authors' analysis is that they also look at distressed firms. These are firms with a high risk of bankruptcy. One may see them as either similar, or also rather opposite to zombies. Like zombies, they also do not have a viable business model. However, zombies have, by definition, a lower probability of bankruptcy because they are implicitly subsidized by "lower-than-natural" interest costs. The analysis shows that the pattern of the relationship between interest rates and likelihood of becoming distressed is different compared to zombie firms. Concerning the CSPP, the likelihood of becoming a distressed or a zombie firm is the same for CSPP-eligible and non-eligible firms. Thus, the CSPP makes no difference for both groups of firms.

The paper addresses a nexus of highly relevant questions. To gain additional insights, the next steps would include the consideration of endogeneity and general-equilibrium effects. For the CSPP, it would be interesting to see how similarly the groups of treatment and comparison firms developed before the announcement of the program. Furthermore, some time series appear quite persistent, and it would be interesting to see how the results compare when taking this into account in the statistical analysis. Overall, the paper conveys an important message: we may have jumped to some conclusions about zombie firms too quickly.

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Recovery and exit of zombie firms in Portugal: A remake

Carlos Carreira, Paulino Teixeira and Ernesto Nieto-Carrillo¹ University of Coimbra and CeBER

Encouraged by the forbearance of creditors and exit barriers (e.g., inefficient insolvency regimes), the zombie phenomenon has weakened business dynamism and, as a consequence, has slowed economic growth in most economies in recent decades. In this paper, we examine the recovery and exit of zombie firms, as well as the determinants of these transitions. Based on a panel of Portuguese firms' population covering the period 2004–2020, we find a widespread prevalence of zombie firms, which are relatively less productive than non-zombies. Moreover, industries with a higher share of zombies have lower productivity levels. Finally, we find that the probability of transition into recovery and exit is relatively small. However, operational and technological restructuring, as well as financial restructuring, are shown to be key drivers of zombie firms' recovery. The insolvency environment is also found to be a strong factor in stimulating business restructuring.

Key words: zombie firms, exit, recovery, restructuring, downsizing *JEL codes:* D24, G32, G33, L25, O47

1 Introduction

Zombie firms – that is, mature firms that are insolvent and kept alive only with the help of creditors – crowd out investment opportunities for more productive firms and discourage innovative firms from entering the market. Aggregate productivity is therefore harmed not only by the existence of zombie firms, but also by the negative externalities they generate on the entry and growth of healthy firms (CABALLERO et al., 2008). A reduction in the share of zombies is therefore expected to generate important economic gains.

Portugal is one of the European countries most affected by the proliferation of zombies (ADALET McGowan et al., 2017a; CARREIRA et al., 2022). Exit barriers play an important role in this zombie prevalence. In addition to evergreen loans that arise when banks make additional credits to problematic borrowers to avoid reporting losses on their own balance sheets, inefficient insolvency regimes have also been identified as a barrier to reallocation (PEEK and ROSENGREN, 2005; ADALET McGowan et al., 2017b; ANDREWS and PETROULAKIS, 2017, STORZ et al., 2017; NIETO-CARRILLO et al., 2022).

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In this paper, we contribute to this strand of literature by analyzing why most zombie firms recover rather than exit the market, and the determinants of these transitions. To study the transitions out of the zombie state, we use a multinomial logistic model where "non-transition", "recovery" and "exit" are treated as distinct and unordered categories. The analysis is based on the population of Portuguese firms over the period 2004–2020.

2 Related literature

Industry productivity growth is expected to be enhanced by the Schumpeterian process of "creative destruction", wherein innovations introduced by new and incumbent firms can be taken as business experiments subject to the market test and the shrink and exit of firms as a necessary selection mechanism through which non-competitive technologies (and products) are excluded. How does this process change when there are zombies? When there are zombies, new and healthy firms have to compete with zombies in the markets for finished products, labor, and funds. This may congest product markets and make it difficult to access workers and financial resources for non-zombie firms (for example, through depressed product prices and higher wages). As a consequence, innovative investments by new entrants and healthy firms may be depressed. Moreover, the congestion caused by the zombies can drive healthy incumbents into trouble, forcing them to exit. Aggregate productivity is therefore harmed not only by the existence of zombie firms per se, but also by the negative externalities they generate on both entry of new firms, and growth and exit of healthy incumbents (CABALLERO et al., 2008).

ADALET McGowan et al. (2017a) showed high prevalence of resources sunk in zombie firms in several European countries over the period 2003–2013. In 2013, the highest share (in the sample) of zombies in terms of the number of firms was found in Spain at 10%, while the highest shares of the capital stock and employment sunk in zombie firms were observed in Italy (19%) and in Belgium (14%), respectively. From 2007 to 2013, the prevalence of zombies has increased in general (the exceptions being the United Kingdom and France). The previous shares are broadly confirmed by other studies using different methodologies to identify zombie firms, including ANDREWS and PETROULAKIS (2017) for 11 European countries (2001–2014); STORZ et al. (2017) for seven European countries (2010–2014); GOUVEIA and OSTERHOLD (2018) for Portugal (2006–2015); HALLAK et al. (2018) for 19 EU countries (2008–2013); ACHARYA et al. (2019) for five European countries (2010–2014); CARREIRA et al. (2022) and NIETO-CARRILLO et al. (2022) for Portugal (2004–2017); and SCHIVARDI et al. (2022) for Italy (2004–2013).

The zombie problem is severe in the periphery of Europe (Greece, Italy Spain, and Portugal), countries that were particularly affected by the global financial crisis and the subsequent European sovereign debt crisis (STORZ et al., 2017; HALLAK et al., 2018; ACHARYA et al., 2019). Indeed, in the case of Portugal, CARREIRA et al. (2022) and NIETO-CARRILLO et al. (2022) found that, on average, about 11% of firms were classified as zombies between 2005 and 2016, with a peak of 12.7% in 2012 (see also STORZ et al., 2017; GOUVEIA and OSTERHOLD, 2018; HALLAK et al., 2018).

Why do creditors of zombie firms continue supporting them instead of claiming their debts? It is to be expected that lenders facing with troubled borrowers will stop making new loans, hastening their death. However, PEEK and ROSENGREN (2005) have shown that Japanese banks, especially undercapitalized ones, misallocated loans in the 1990s. This was due to regulatory forbearance and perverse incentives that led them to make additional loans to severely impaired borrowers (so called "evergreening" loans) to avoid having to declare the loans as nonperforming and record losses on their own balance sheets.

This seminal study from Japan seems to provide insights into the proximate causes of zombie prevalence in Europe. Indeed, using data on bank lending to individual enterprises in Croatia during the Global Financial Crisis and subsequent sovereign debt crisis, BROZ and RIDZAK (2017) concluded that banks grant loans to zombie firms only when it is in their self-interest. Likewise, ACHARYA et al. (2019) and SCHIVARDI et al. (2022) provide some evidence that undercapitalized banks during the crisis period directed loans to zombie firms to avoid the recognition of loan losses. Relatedly, ANDREWS and PETROULAKIS (2017) and STORZ et al. (2017) have found that zombie firms tend to be associated with weak banks, suggesting that the zombie problem is at least partly due to bank forbearance.

BLATTNER et al. (2019) observed that, following an unexpected increase in capital requirement imposed by the European Banking Authority in 2011, affected Portuguese banks significantly decreased lending. However, consistent with the evergreen lending to zombie firms, they also found that these banks reallocated credit to borrowers with previously underreported loan loss. Relatedly, BONFIM et al. (2022) found that Portuguese banks were less likely to refinance firms with negative equity after bank inspections of the credit portfolio, implying a significant reduction in the unconditional probability of refinancing.

When considering sources of financing, it is important to also consider other funding options besides bank credit, especially trade credit. Indeed, trade credit is widely used and represents an important funding source for several firms (CUÑAT and GARCÍA-APPENDINI, 2012). Lu et al. (2020), using a sample of listed firms

in China over the period 2005–2015, found that equity markets and suppliers provide substantial financing support to zombie firms, while banks are less important. In turn, SHIRAISHI and YANO (2021) verified that zombie (private) firms in China from 2002 to 2009 avoided exiting the market by accessing trade credit. In contrast, CARREIRA and LOPES (2022) found that Portuguese suppliers are more cautious in lending to zombie firms than banks. In this paper, we consider all forms of forbearance from creditors.

The prevalence of zombie firms is not only associated with evergreen loans. ADALET MCGOWAN et al. (2017b) found that greater barriers to restructuring (e.g., insolvency regimes and personal costs of the entrepreneur) are associated with a lower probability of recovery of zombie firms, as well as with a higher probability of healthy firms becoming zombies. The emphasis of this paper is on the determinants of the recovery and exit of zombie firms, which have rarely been examined in this context.

3 Data and methodology

3.1 The dataset

We originally compiled the dataset used in this study in CARREIRA et al. (2022), extracting the raw data from the Integrated Business Accounts System (SCIE, Portuguese acronym), administered by the Portuguese Statistical Office (INE). The SCIE covers the universe of Portuguese non-financial firms and contains information on structural firm characteristics and economic/financial activity. In particular, our sample covers the whole population of firms operating in Portugal, except the financial sector, and education, health and cultural services, from 2004 to 2020. We excluded from our sample firms that never exceeded the threshold of microenterprise over the sample period (i.e., fewer than then employees and an annual turnover or total assets of up to $\in 2$ million).²

After this preliminary filtering, the information obtained was refined. Observations with unreasonable values (e.g., non-strictly positive values for gross output and total net assets) were corrected or discarded. In addition, since the identification of zombie firms depends on meeting a low profitability criterion for three consecutive years (see the next section), we linearly interpolate one-year gaps in missing values. Finally, we truncated 1% of the extreme ratios (percentiles 1 and 99) presented by the variables defined in next section. Our final sample

² Most of these businesses are "family" firms, thus profit generation is not likely to be their main motivation.

comprises an unbalanced panel of 136,342 firms, making up 1,473,837 year-firm observations.

3.2 Defining zombie firms

We define zombie firms as mature firms that are indebted and have no potential to repay their debts over an extended period due to lack of profitability. Several strategies have been proposed in the literature to identify which firms can be classified as zombies. A common approach is to use the *profitability* and *evergreen lending* criteria proposed by FUKUDA and NAKAMURA (2011). In addition, SCHIVARDI et al. (2022) and ADALET MCGOWAN et al. (2017a) suggest using the criteria of *default risk* and *maturity*, respectively.

In this study, a firm is flagged as a zombie whenever (i) its return-on-assets is lower than the low-risk interest rate for at least three consecutive years; (ii) its leverage is higher than the industry mean (at the two-digit NACE level) of the low return-on-assets exiting group;³ and (iii) it is more than five years old (CARREIRA et al., 2022). The rationale is that firms that are already indebted and have no potential to repay their debts are likely to be on the verge of exit unless their creditors tolerate their continuation. The three-consecutive-year criterion ensures that the firms are persistently unviable. The age criterion serves to distinguish true zombie firms from young, innovative start-ups (ADALET MCGOWAN et al., 2017a). The age threshold of five years was chosen because this is the age limit used in several studies to define young, high-growth firms (DECKER et al. 2016).

The return-on-assets is defined as the ratio of earnings before interests, taxes, depreciations and amortizations (EBITDA) to total assets. EBITDA is what is left to remunerate capital after paying labor and intermediates inputs. We compare return-on-assets to the average Euribor 12-month interest rate, the indexing interest rate most commonly used by Portuguese banking system. The leverage is defined as the ratio of the sum of debt in current liabilities and long-term debt to total assets. That is, we assume that the financial protection of zombie firms does not come only from banks' forbearance, but also from all types of creditors – a key issue in the context of the Portuguese economy (CARREIRA and LOPES, 2022). Firm exit is flagged when a unit ceases production; some firms are economically inactive (i.e., with gross output equal to zero) while still legally active (CARREIRA and TEIXEIRA, 2011).

³ We use the criterion "low return-on-assets" because the SCIE data do not distinguish whether the exit is due to bankruptcy, voluntary closure or a merger or acquisition (M&A). Nevertheless, previous evidence suggests that M&As are rare events in the Portuguese economy, not exceeding 1% of the total number of business closures (MATA and PORTUGAL, 2004).

Finally, to avoid potential misidentifications of zombie firms, we exclude one-shot zombie firms (i.e., one-off zombies) and include one-shot restructuring firms (i.e., zombies that become non-zombies in t+1 and zombies again in t+2).

3.3 Productivity measure and other independent variables

Firm-level productivity is measured by revenue total factor productivity (TFP) obtained as the residual of a production function in log form (i.e., the difference between firms' output and the weighted sum of inputs). To overcome the well-known simultaneity and selection bias problem, the three-input Cobb-Douglas production function was estimated using the method of LEVINSOHN and PETRIN (2003) controlling for endogenous exit (ROVIGATTI and MOLLIS, 2018).

Production is measured as the value of sales of goods and services, less the value of purchases of goods for resale, adjusted for changes in inventory of final goods, self-consumption of own production and other operating revenues, and was deflated by the producer price index at the two-digit industry level. Materials include the cost of materials and services purchased, and were deflated by the GDP deflator index. Capital was computed by applying the perpetual inventory method to the change in total real assets (i.e., it includes not only tangible and intangible assets but also current assets, all important to the operation of the firm).

4 Empirical analysis

4.1 Prevalence of zombie firms

Zombie firms are quite prevalent in the Portuguese economy. Figure 1 shows the share of zombies in terms of the number of firms and financial resources sunk into zombies. On average, about 7.6% of the firms in the sample were classified as zombies between 2005 and 2019, while the share of employment and assets sunk in zombie firms is 5.1% and 9.1%, respectively. Unsurprisingly, the debt-weighted zombie share (thus, the implied bad debt ratio) is larger than the share in terms of number of firms, at 14.0% on average. These shares broadly confirm the pattern observed in other European countries (e.g., ADALET MCGOWAN et al., 2017a). They are also similar to those reported by GOUVEIA and OSTERHOLD (2018), whose estimates range from 6.5% in 2008 to 8.5% in 2013, but lower than those of CARREIRA et al. (2022) for a sample that includes microenterprises in the period 2005–2016.⁴

⁴ The share of zombie firms is about 6.3 percentage points larger for microenterprises than for small and mediumsized enterprises (SMEs) (CARREIRA et al., 2022). Moreover, about 40% (46%) of labour (capital) sunk in zombie firms is done by microenterprises (NIETO-CARRILLO et al., 2022).



low-risk interest rate for three consecutive years and a leverage ratio higher than the industry median of the low return-on-the-assets exiting group. Assets, debt and employment refer to the respective weighted averages of the zombies.

Cyclical fluctuations clearly emerge from Figure 1. The share of zombie firms rises to a peak in 2012, at 10.6%, possibly due to greater forbearance during the 2007–2008 global financial crisis and the subsequent European sovereign debt crisis (the Great Recession). After 2012, the percentage of zombie firms declines, probably due to the implementation of measures by the European Central Bank to strengthen the prudential supervision of credit institutions and the reform of the Portuguese insolvency regime (NIETO-CARRILLO et al., 2022).

Figure 2 shows the prevalence of zombie firms by industry. While there are some differences across industries, the general pattern holds. The exceptions are Accommodation and food, Construction, and Other services, where the percentage of zombie firms rose sharply during the Great Recession, following the austerity measures adopted after the 2011 international financial assistance program (the "Memorandum of Understanding" negotiated between the Portuguese government and the European Commission, the European Central Bank and the International Monetary Fund). It appears that non-performing firms in these industries are relatively more exposed in bad times to the personal costs associated with failed entrepreneurship and barriers to restructuring, which foster the survival of firms that would otherwise exit the market.

Figure 2: Share of zombie firms by industry, 2005–2019



Table 1: Descriptive statistics of zombie and non-zombie firm	rms
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Variable	Non-zombies		Zombies	
	Mean	Std. dev.	Mean	Std. dev.
Productivity (TFP deviation)	0.0346	0.6306	-0.4914	1.0577
Production (real)	2 182.71	31 260.58	1 039.08	7 211.94
GVA (real)	758.60	8 154.48	209.22	1 686.64
Number of employees	24.60	171.82	15.89	100.48
Assets	5 538.40	103 964.60	6 661.34	118 364.90
Profitability rate (ROA)	0.0707	0.1906	-0.1405	0.2589
Leverage	0.6483	0.2720	0.9537	0.0727

Notes:

TFP (total factor productivity) is the log deviation from the industry-year mean, which in turn is computed as the log difference between output and the weighted sum of inputs. Production is the (real) sales of goods and services, adjusted for changes in inventory of final goods, self-consumption of own production and other operating revenues. GVA is the (real) gross value added. Assets is the book value of total (net) assets. ROA (return-on-assets) is the ratio of earnings before interests, taxes, depreciations and amortizations to assets. Leverage is the ratio of total debt to assets. Monetary variables are in constant 2004 103 euros. Pooled yearly values, 2005–2019.
Table 1 shows the main economic and financial indicators of zombie versus nonzombie firms. Notice that the average zombie is less productive, smaller (both in terms of production and number of employees), relatively more indebted and less profitable than its non-zombie counterpart. About 56% of zombies have negative equity (i.e., liabilities greater than assets) and 83% have losses, indicating that most of them were on the verge of insolvency.

4.2 Industry productivity and the share of zombie firms

Zombie firms tend to hinder competition and the efficient allocation of resources, leading to lower industry (i.e. weighted aggregate) productivity growth. Figure 3 and Table 2 appear to confirm this hypothesis. As can be seen in Figure 3, there is a negative relationship between the share of zombie firms and industry productivity (at the two-digit level NACE Rev. 2). Moreover, a 1% decrease in the share of zombie firms leads to a 0.78% increase in the level of industry TFP (Table 2).







Each dot reports industry productivity and zombies share at the industry-year level, at two-digit NACE Rev.2 level, 2005–2019.

Variable	Industry TFP
Industry zombies share	-0.7974***
	(0.0366)
Industry dummies	Yes
Year dummies	Yes
\mathbb{R}^2	0.961
F-test	216.20
No. of observations	405

Table 2:	Industry	productivity	and the	share of	zombie firms
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Notes:

OLS regression of (log) industry productivity on (log) zombies shares at industry-year level (two-digit NACE Rev. 2). Standard errors are given in parentheses. ***Statistical significance at the 0.01 level.

By eliminating poorly performing firms in a well-functioning market economy, we should expect the productivity gap between frontier and zombie firms to narrow. But instead of zombie firms catching-up the technological frontier, Figure 4 shows a persistent (and widening) productivity gap. Their TFP falls by 0.6% per year on average, while the TFP of frontier firms (the top 5% most productive firms in each industry) rises by 1.6% per year, resulting in a productivity gap divergence of 2.2 percentage points per year.





Notes:

Zombies and non-zombies lines give the weighted average (log) TFP. The global frontier is defined as the productivity of the top 5% most productive firms per each industry (two-digit NACE Rev.2 level). Unweighted averages across industries normalised to 0 for the frontier in the starting year (2005).

4.3 Recovery and exit of zombie firms

Poorly performing firms should be compelled to restructure or exit in a wellfunctioning market economy. However, forbearance lending by banks and other creditors can lead to zombie firms maintaining their status over time. Actually, as can be seen in Figure 5, the (conditional) probability of recovering or exiting zombie status is relatively low, which means that the likelihood of remaining as a zombie is quite high (on average 77.9% over the entire period), while recovery and exit rates are 14.1% and 8.0%, respectively. During the crisis period, the likelihood of exiting zombie status rose to maximum values of around 10% in 2011 and 2012, while the recovery probability fell to minimum values. After the crisis and with the reform of the insolvency framework, there was a growing and sustained trend in the recovery rate, and a slight decrease in the exit rate. However, the likelihood of remaining a zombie falls about 8.0 percentage points from 2010 to 2018.





Notes:

The graph shows the conditional probability of a zombie firm recovery, exit or remains a zombie in the following year. It is computed as the ratio of the number of remaining/ exiting/recovering zombies in t+1 to the number of zombies that have "survived" up to t.

To investigate the determinants of zombie firm transitions into the three destinations (i.e., the binary outcomes of "remain as a zombie", "recover" or "exit the market"), we use a multinomial logistic model, following CARREIRA et al. (2022). We consider three subsets of covariates as explanatory variables. First, to proxy the operational and technological restructuring of zombie firms, we use the change in the number of employees, the change in assets and the change in productivity, all computed in log differences. Second, to capture financial restructuring capacity, we use financial variables related to external and internal resources, leverage ratio and the return-on-assets, respectively (in log form). Finally, we include firm-level control variables (zombie duration, firm age, employment and assets) and the external environment (industry and year dummies). We also consider a binary variable to control for the new insolvency environment (i.e., the strengthening of the prudential supervision of credit institutions by the European Central Bank and reform of the Portuguese insolvency regime; see NIETO-CARRILLO et al., 2022), which has a value of one for the period after 2012 and zero otherwise. The explanatory variables are lagged one year to avoid the simultaneous bias problem (FUKUDA and NAKAMURA, 2011).

Table 3 presents the results of the multinomial logit regression with remining as a zombie the base category. The null hypothesis that all coefficients are jointly equal to zero is rejected at the 0.01 level of significance (the Wald test at the bottom of the table). Given the reference category, the sign of each coefficient can be interpreted as the effectiveness of each explanatory variable in the transition into recovery or exit.

Technological restructuring seems to be an effective way to promote recovery of troubled firms, while it reduces the likelihood of exit. Indeed, the coefficients on the *change in assets* and *change in productivity* in recovery category are significantly positive. In particular, all else constant, a one-unit increase in Δ Log *Assets* and Δ Log *TFP*, respectively, which we assume as a consequence of new technological investments, results in an increase in relative odds of recovery vis-à-vis remaining zombie of 8.0% and 4.1% (the odds ratios are $1.080 = e^{0.077}$ and $1.041 = e^{0.040}$, respectively). Notice that the *change in the number of employees* (i.e. downsizing) coefficient is not statistically significant.

Variable	Recovery	Exit
ΔLog Employment	0.005	-0.567***
	(0.025)	(0.024)
$\Delta Log Assets$	0.077***	-0.472***
	(0.023)	(0.026)
$\Delta Log TFP$	0.040***	-0.159***
	(0.009)	(0.012)
Log <i>Leverage</i>	-0.359***	2.575***
	(0.119)	(0.232)
Log Return-on-assets	0.099***	-0.041***
	(0.006)	(0.009)
Log Zombie duration	0.862***	0.559***
	(0.017)	(0.022)
Log Age	-0.162***	-0.194***
	(0.020)	(0.024)
Log Employment	0.106***	-0.024*
	(0.010)	(0.013)
Log Assets	-0.059***	-0.137***
	(0.007)	(0.009)
Insolvency regime (new=1)	0.563***	0.037
	(0.062)	(0.078)
Constant	-0.968***	-1.540***
	(0.138)	(0.185)
Industry dummy	Yes	Yes
Year dummy	Yes	Yes
No. of observations		86,130
Wald chi-square		7226.91***
Log pseudolikelihood		-55105.88
Pseudo R2		0.0700

Table 3:Multinomial logit regression

Notes:

The base category for the dependent variable is the remaining zombie status. The variables were winsorised at the 1st and 99th percentiles. Firm-cluster robust standard errors are given in parentheses. ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

In the case of exit, the *change in assets, change in the number of employees* and *change in productivity coefficients* are all significantly negative – the odds ratios are $0.624=e^{-0.472}$, $0.567=e^{-0.567}$ and $0.853=e^{-0.159}$, respectively. Specifically, the technological restructuring seems to reduce the likelihood of exit – a one-unit increase in Δ Log *Assets* (Δ Log *TFP*) makes the outcome of exit 37.6% (14.7%) less likely, *ceteris paribus* – while downsizing promotes exit – the relative risk of exit vis-à-vis remaining zombie increases by 43.3% (= $e^{-0.567}$ –1) with a one-unit decrease in Δ Log *Employment*.

Regarding financial restructuring capacity, the Log *Leverage* coefficient is significantly negative and positive, that is, firms that reduce their debt are more likely to recover and at less risk of exit. In contrast, rising cash flows (Log *Returnon-assets*) are associated with recovery and a lower probability of exit (10.4% and 4%, respectively).

The *Zombie duration* coefficient is significantly positive, that is, the chance of a firm remaining a zombie decreases, an expected effect related to the fact that most zombies stay alive only due to forbearance lending and information asymmetry decreases over time. The larger (measured by the number of employees) the zombie, the higher (lower) the probability of transition to recovery (exit). Conversely, firms with more assets and older firms have a higher likelihood of remaining zombies. Apparently, managers of these firms have considerable power to turn the tables on hostile creditors, as their failure has adverse consequences for creditors and perhaps the whole financial system ("too big to fail"; see MoosA, 2010).

Finally, regarding the new insolvency environment, the dummy seems to suggest that the relative probability of recovery is higher, which is in line with results found by NIETO-CARRILLO et al. (2022).

5 Conclusion

Encouraged by the forbearance of creditors and inefficient insolvency regimes, the zombie phenomenon has weakened business dynamism and, as a consequence, has slowed economic growth in most economies in recent decades. Using the population of Portuguese firms over the period 2004–2020, our approach focuses largely on the transitions into recovery and exit, as well as on the corresponding determinants.

We find a widespread presence of zombie firms. We also confirm that they are relatively less productive than non-zombies. Moreover, industries with a higher share of zombies have lower productivity levels.

Recovery and exit are expected to lead to higher industry productivity growth, but the probability of transition into recovery and exit has been relatively small in the data. However, the regression results show that operational and technological restructuring, as well as financial restructuring, are crucial to promoting the recovery of zombie firms. The strengthening of the prudential supervision of credit institutions by the European Central Bank and the reform of the Portuguese insolvency regime, in particular, have been proved to stimulate business restructuring.

These results have non-trivial implications for managers and policymakers. Not all zombies are unviable firms, and therefore dealing with this subset of firms requires a holistic and coordinated strategy that includes operational and technological restructuring and debt restructuring. Governments should also implement an appropriate institutional framework to strengthen the restructuring or the exit of unhealthy firms.

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Comment on "Recovery and exit of zombie firms in Portugal" by Carlos Carreira, Paulino Teixeira, and Ernesto Nieto-Carrillo

Reto Föllmi University of St. Gallen and CEPR

Research question and principal findings

CARLOS CARREIRA, PAULINO TEIXEIRA and ERNESTO NIETO-CARRILLO tackle the question of whether zombie firms stay zombies forever. With this goal in mind, they analyze the recovery and exit of zombie firms in Portugal using a multinomial logistic model.

Here, zombie firms are defined as mature firms whose debt levels are too high and have no potential to repay their debts over an extended period due to lack of profitability. The study classifies a firm as a zombie whenever the following three criteria hold at the same time: (i) its return-on-assets is lower than the lowrisk interest rate for at least three consecutive years; (ii) its leverage is higher than the industry-mean (at the two-digit NACE level) of the low return-on-assets exiting group; and (iii) the firm in question is older than five years. This definition follows the literature that uses profitability and "evergreen lending" criteria in addition to default risk and maturity structure to identify zombies.

On the basis of this definition, on average around 7.6% of the firms in the authors' sample are classified as zombies, with a peak at 10.6% in 2012, after the Great Recession. Most zombie firms have negative equity and 83% incur losses. Compared to non-zombies, the productivity of zombie firms is around 0.53 log points (i.e., 41%) lower. The authors find that more zombie firms recover rather than exit the market. On a yearly basis, 14.1% of firms recover and only 8.0% exit; the remaining 77.9% remain in the zombie status.

The study finds that inefficient insolvency regimes and evergreen loans play an important role in the prevalence of zombie firms in Portugal. The authors also find that firms with higher productivity, profitability, and liquidity are more likely to recover, while firms with lower productivity and profitability are more likely to exit the market.

Assessment of the paper's findings

Following CABALLERO et al. (2008), the presence of zombies has two main negative effects on the economy. First, low-productivity firms that would exit if they were to honor their debt obligations stay in the market — this is called the "sclerosis effect". Second, the presence of zombies deters entry of new and potentially more firms, because of the resources absorbed by the low-productivity firms. This is often referred to as the "scrambling effect".

The paper makes two main contributions to the existing literature on zombie firms. First, and outlined above, it analyzes why most zombie firms recover rather than exit the market, and the determinants of these transitions. Second, it provides insights into the factors that contribute to the persistence of zombie firms in Portugal and the determinants of their recovery or exit. In turn, this can inform policy decisions aimed at promoting business dynamism and economic growth in the country. Portugal is one of the European countries most affected by the proliferation of zombie firms in Portugal is due to inefficient insolvency regimes and evergreen loans, which create exit barriers and therefore play an important role in the persistence of these firms.

There is much to like about this paper. The dynamic aspect of zombie firms is often forgotten. Hence, this paper fills an important gap in the discussion of whether and how many companies are zombies. What happens to firms over time that are classified as zombies? Are these firms, as their name suggests, the "living dead" and therefore destined to die? The paper takes an innovative focus by looking at recovery.

However, by doing so, the paper asks the deeper question of what a zombie really is. If zombies have the possibility to recover, it becomes questionable whether the label makes still sense. Indeed, going back to the original definition, zombies have debt levels that are too high, but if they increase their profits they could reach a sustainable territory where the expected present value of profits is sufficient to cover debt obligations. Therefore, not all zombies are unviable firms. As the authors emphasize in their conclusion, complex restructuring efforts are needed to address the problems of these firms. Efficient insolvency regimes are certainly a part of the solution, allowing for reallocation of assets.

To gain even more insights, the following three aspects deserve more attention in subsequent research. First, in this study the incidence of recovery and exit is estimated in a multinomial logit regression. These changes in firm status are explained, for example, by the change in assets or the change in total factor productivity (TFP) in the same year. It is questionable whether a lag of one year is sufficient. If employment, assets or TFP are measured almost simultaneously with zombie status, endogeneity and two-way causation cannot be ruled out. If the business cycle evolves favorably, both profitability and employment could rise at the same time – the latter being an important determinant of zombie status. Thus, it would be interesting to increase the lags to better understand what causes zombies to exit the market or to recover to a healthy status (for instance, whether changes in TFP improve the recovery probability for several years).

Second, it is instructive to compare industry productivity and zombie share. An increase in the share of zombie firms of 1% leads to a 0.78% decrease in the level of industry TFP. Whether this is not simply a mechanical connection should be analyzed further; as it stands now, it is not clear what we learn from this number. If there are more zombies, productivity will be lower. In addition, negative shocks affecting the relative demand in an industry will both likely reduce productivity and increase the prevalence of zombies.

Third, the authors apply a conservative criterion to define zombies. Recall that a firm is a zombie whenever all three following criteria hold together: low returnon-assets, high leverage, and being older than five years. Using a conservative criterion is a two-sided sword. The analyst minimizes the risk that a non-zombie is defined as a zombie. This allows zombie firms to be tracked consistently over time. However, there is a problem because the paper focuses on recovery (and exit). Consider the example of a firm where restructuring leads to lower leverage but the return-on-assets does not improve. Thus, the firm improves in one criterion and will no longer be classified as zombie. The question is whether it is still a zombie because it continues to underperform in returns.

In my view, this leads to the interesting question of what defines a viable company, and this topic is at the heart of the paper. A company could have bad financial numbers because of a short-run negative shock or because the underlying business model is not sustainable. The crucial point is how to differentiate adverse effects in the short run from firms running obsolete business models in the longer run. More research will be needed to have more guidance on which criteria can be used to make that differentiation. This is a central question in economic policy – we need stabilization policy to mitigate the adverse effects of recession, but we should restrain ourselves from keeping unproductive companies alive. The resources that these moribund firms employ lack younger, more productive firms and industries. This paper serves an important function in bringing this important topic back to the table.

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CABALLERO, RICARDO, TAKEO HOSHI and ANIL KASHYAP (2008), Zombie Lending and Depressed Restructuring in Japan, *American Economic Review* 98 (5), pp. 1943–1977.

A case of unilateral trade liberalization: The autonomous abolition of industrial tariffs by Switzerland in 2024

Thomas A. Zimmermann¹

State Secretariat for Economic Affairs (SECO) and University of St. Gallen (SIAW-HSG)

On 1 January 2024, Switzerland will implement a major trade policy reform by autonomously eliminating all tariffs on imports of industrial products regardless of their origin. After a brief review of the literature on unilateral trade liberalization and the current Swiss tariff landscape, this paper presents the motivation and the substance of the reform. The elimination of industrial tariffs will reduce the net fiscal burden on imports by around CHF 600 million per year. In addition, imports will be easier to administer, as the Swiss customs tariff will be simplified (thanks to a reduction in tariff numbers) and proofs of origin will no longer be required for goods that remain in Switzerland. We summarize the main findings of studies carried out in the run-up to the reform. The political process and debates leading up to parliamentary approval of the reform, its reception in international fora and the ongoing work on implementation are presented as well. I conclude that the difficult process of obtaining parliamentary approval confirms the insights from the political economy literature that unilateral trade liberalization is politically difficult to achieve in a purely domestic context, despite the economic benefits it brings. From an economic perspective, the contribution of unilateral liberalization to domestic market opening is substantial and has certain advantages, also in comparison to other trade policy instruments such as free trade agreements (FTAs). Unilateral liberalization and preferential liberalization through FTAs need not be mutually exclusive but can be seen as complementary trade policy tools.

Key words:free trade, tariffs, unilateral liberalization, autonomous trade policyJEL codes:F13

1 Introduction

On 1 January 2024, Switzerland will autonomously abolish all its tariffs on imports of industrial products, regardless of their country of origin. This unilateral measure will reduce the net fiscal burden on the economy, including businesses and consumers, by around CHF 600 million per year and will allow for administrative facilitations. As a result, the annual tariff revenue of the Confederation will fall, reducing its share in total central government revenue by around half from an already low 1.61% in 2022 to just 0.82% in 2024. At the same time, Switzerland's General Tariff for industrial goods will be simplified, with the number of tariff positions falling from 9,114 to 7,511.

¹ In his role at SECO, the author has accompanied the parliamentary approval and implementation processes for the autonomous abolition of industrial tariffs since taking office on 1 September 2020. The views expressed in this article are the author's own and shall not be attributed to any of the institutions with which he is affiliated. The author thanks Rocio Almagro Montero, Peter Fleer, Michèle Glauser, Martin Hengärtner, Matthias Howald, Gabriel Spaeti, Tareka Wenger-Peterson and Alexander Zimmermann Almagro for valuable support. All errors are those of the author.

This article provides an overview of the project and its context. I begin with a brief overview of unilateral and other (reciprocal) forms of trade liberalization, their reception in the literature and their applicability to the Swiss case (Section 2). I then briefly describe the past and current tariff situation in Switzerland (Section 3) before tracing the path that led to the Federal Council's decision to unilaterally abolish tariffs in Switzerland (Section 4). Section 5 details the substance of the reform, while Section 6 outlines its expected effects. Section 7 gives an account of the domestic political approval process, while Section 8 summarizes the international reception of the reform. Section 9 looks at the work on implementation and Section 10 concludes.

2 Reciprocal versus unilateral trade liberalization

2.1 Theory and literature

A major discrepancy between economic theory and real-world economic policy can be found in the area of trade. On the one hand, most economists agree on the economic superiority of free trade policies over protectionism. If this view were to prevail also in trade policy practice, most countries would adopt a free trade policy and simply dismantle trade barriers unilaterally. As a result, there would be no need for reciprocity to achieve open markets. However, the reality of economic policy-making is fundamentally different: in the real world, trade barriers abound. And when it comes to removing them, many, if not most, policymakers and trade negotiators are imbued with the concept of reciprocity. Under reciprocity, countries liberalize their import regimes only after tough and often lengthy negotiations. Any move to liberalize one's own market is seen as a concession that can only be made in exchange for reciprocal concessions from other countries. Because of the prominent role of reciprocity in trade policy thinking, far more attention and resources are devoted to reciprocity-based trade negotiations than to the possibilities of unilateral (or autonomous) trade liberalization, despite the economic benefits that the latter may bring.

Broadly speaking, reciprocity-based negotiations can take place at the multilateral level of the GATT/WTO, at the regional level or at the bilateral level. At the multilateral level, any trade liberalization agreed is usually applied on an *erga omnes* basis in accordance with the most-favored nation (MFN) principle.²

² Multilateral trade negotiations take place within the World Trade Organization (WTO), which currently has 164 members. They are based on reciprocity (see Art. XXVIII bis GATT), although there are lower requirements when negotiating with developing countries (see Art. XXXVI.8 GATT, including the interpretative note). Concessions are usually granted on an MFN basis, i.e., they apply to all WTO members. On the design of the WTO, see for example BAGWELL and STAIGER (2010). On reciprocity in the early days of the GATT, see ENDERS (2003). For simplicity, we do not discuss plurilateral agreements here.

By contrast, trade liberalization agreed in the context of regional or bilateral agreements – such as free trade agreements (FTAs) or customs unions (CUs) based on Art XXIV:5-10 GATT – normally only results in trade preferences that apply to the other parties to the same agreement.

As a result, such trade preferences discriminate between outsiders and insiders. They constitute an exception to the MFN principle of the WTO, which is laid down in Art. I GATT for trade in goods. From an economic welfare perspective, trade liberalization under MFN conditions is generally preferable to the discriminatory granting of trade preferences under FTAs. As VINER already noted in 1950 in his famous book on *The Customs Union Issue*, preferential agreements not only lead to welfare-increasing trade creation, but also to welfare-decreasing trade diversion. The latter occurs when import demand is diverted from more efficient countries of supply to less efficient countries of supply, whose only advantage is the "artificially" created trade preference under the FTA or CU. These trade diversion effects are often reinforced by restrictive rules of origin. By contrast, MFN-based liberalization – whether agreed in the multilateral, reciprocal context of the WTO or granted unilaterally as a result of autonomous trade liberalization – only leads to welfare-increasing trade creation.

Returning to the question or reciprocal versus non-reciprocal liberalization, several reasons may explain the preference of policy-makers for reciprocity-based negotiations over unilateral liberalization. Apart from a possible mercantilist mindset, the more economic arguments include considerations related to terms of trade, safeguarding employment and the balance of payments, the value of retained trade concessions as bargaining chips in future negotiations, or political economy considerations.

However, as ROESSLER already pointed out in 1978, most of the arguments in favor of reciprocity requirements are not convincing from an economic point of view. The terms of trade argument (which is conceivable for large countries with monopsonistic or monopolistic power) has hardly played a role in reality and is, by its very nature, not an argument that smaller countries would have to consider. As for the employment argument and the balance of payments argument in favor of reciprocity, both have lost their relevance in the presence of flexible exchange rates, since any disequilibria that might result from unilateral liberalization in the labor market or in the balance of payments could be absorbed by a depreciation of the exchange rate. Another often-heard argument for demanding reciprocity – the value of maintaining trade barriers as a bargaining chip for future negotiations – is also questionable. This is particularly true as there is a time element that may reduce the present value of a future trade deal to the point where it is worth less than the economic benefits that would have resulted from immediate unilateral

liberalization. As ROESSLER concludes, reciprocity is primarily a domestic policy tool to reduce the domestic political costs of trade liberalization and thereby make it politically feasible at home.

Indeed, reciprocity appears to be particularly relevant from a political economy perspective. It is an important domestic policy tool for overcoming political opposition to economically desirable trade liberalization and for mobilizing export-oriented interests to tilt the domestic political balance in favor of liberal trade policies. It also helps policy-makers to show that they are getting something in return for the perceived "gift" to foreign countries that is often mistakenly seen in tariff reductions. While the focus on reciprocity in the real world is likely to be driven primarily by these political considerations, there is also an economic argument that individual (especially small) countries can, however, only influence to a limited extent: if reciprocity leads to greater global liberalization, even if only sequentially, the economic gains from trade will be greater than if one country "goes it alone".³

As a consequence of the general focus on reciprocity-based negotiations in trade policy discussions, the opportunities of unilateral trade liberalization are often overlooked, including in the academic literature (VÉZINA, 2010, p. 3). Nevertheless, there are strong arguments in favor of unilateral liberalization⁴ and they have a long history, starting with the famous repeal of the Corn Laws by England in 1846 (BHAGWATI, 2003a, p. 3).⁵ More recently, many countries – especially developing countries – have undertaken unilateral liberalization initiatives. LAWRENCE (2021) recently referred to this as an "unappreciated trend towards unilateral liberalization".⁶ BALDWIN (2012) has explained this trend towards unilateral liberalization with the communication technology revolution that has shifted the political-economy equilibrium against protectionism in favor of joining international supply chains, which entails tariff liberalization.⁷ Other reasons for unilateral trade liberalization discussed in the academic literature include the wish

³ See Bhagwatt (2003a, pp. 5ff) and, in more detail, CONYBEARE (2003).

⁴ For a brief overview, see BOURDREAUX (2020). BHAGWATT (2002) provides a detailed study of cases of unilateral liberalization.

⁵ For an insightful account of the history of the debate between "reciprocitarians" and unilateral free traders, see BHAGWATI and IRWIN (1987).

⁶ In a similar vein, MARTIN and NG (2007), in a survey of sources on tariff reductions in developing countries between 1983 and 2003, found that autonomous liberalization decisions, participation in World Bank/IMF adjustment programs or liberalization associated with WTO accession accounted for 66% of the observed tariff reduction, while the Uruguay Round contributed 24.7% and liberalization under regional trade agreements contributed just under 10%.

⁷ For a more detailed analysis, see BALDWIN (2010).

to attract foreign direct investment (FDI),⁸ ideological orientations,⁹ trade policy leadership (COATES and LUDEMA, 2001), cross-reciprocity,¹⁰ or the possibility of reducing welfare-destroying trade diversion from earlier preferential trade liberalization (ESTEVADEORDAL et al., 2008, p. 1568).¹¹

Although most of the literature and published case studies focus on the experience of unilateral liberalization in developing countries,¹² there are also a few examples of (mostly small or medium-sized) industrialized countries that have unilaterally freed trade from tariffs to varying degrees. These include Australia, Canada, Hong Kong, Iceland, New Zealand, Norway and Singapore. An analysis by MAHLSTEIN et al. (2017) presents the experiences of Canada, New Zealand and Norway. While the unilateral liberalization projects of these countries differed in terms of the periods of liberalization, the approaches chosen, the extent of liberalization, the objectives and the starting points, the authors found for all three countries "significative positive economic effects, thus confirming current economic theory" (p. 4).¹³

2.2 Is Switzerland a candidate for unilateral liberalisation?

From the literature discussed above, we can draw some preliminary conclusions about the conditions under which unilateral liberalization can be considered as a trade policy option for a country:

 Limited market weight and, consequently, limited ability to extract trade concessions in reciprocity-based negotiations

⁸ See VÉZINA (2010), who studied this phenomenon for East Asian countries that unilaterally and competitively lowered their tariffs to attract manufacturing-oriented FDI from Japan.

⁹ See the case study of trade liberalization in Chile by EDWARDS and LEDERMAN (1998), who also analyze the role of ideas (see in particular pp. 14ff.).

¹⁰ Cross-reciprocity can be understood as unilateral liberalisation triggered by other incentives, such as financial assistance (e.g., from the IMF or the World Bank), which helps to offset the political or economic costs of liberalization (McCulloch, 2003).

¹¹ The authors note that "(b)ecause the multilateral system has not enforced much tariff reduction on developing countries, tariffs are relatively high there, creating a large potential for trade diversion. Lower external tariffs moderate that loss. Our results suggest that this force is important in explaining changes in MFN tariffs of Latin American countries involved in free trade areas."

¹² See BHAGWATI (2003), including PANAGARYIA (2003) for Asia, McCulloch (2003) for Latin America and MESSERLIN (2003) for Eastern Europe.

¹³ The authors found significant positive effects on export growth in New Zealand and Canada, but an insignificant positive effect on non-oil exports in the case of Norway. Similarly, there was a measurable impact on productivity growth in New Zealand and Canada, but not in Norway. In terms of employment effects, the model used by the authors suggests heterogenous effects of the reform (depending on the stage of the liberalisation process analysed) in New Zealand, some positive spillover effects for Canada and rather large and statistically significant effects for Norway. However, both New Zealand and Norway implemented other policy reforms around the same time as they liberalized their trade, which complicates the analysis of the effects. A summary of the study is available in SCHROPP and MAHLSTEIN (2018). See also GARNAUT (2003) on the Australian experience and EvANS and RICHARDSON (2003) on the New Zealand experience.

- A certain exhaustion of the economically meaningful and politically feasible potential of reciprocity-based trade agreements (and hence the limited value of retaining negotiating mass for future negotiations)
- Floating exchange rates (and possibly a liberal labor market), which help to absorb any imbalances resulting from unilateral liberalization in the balance of payments or in the labor market
- A (domestic) political-economy equilibrium against protectionism and in favor of joining international supply chains. Such an equilibrium is most likely when:
 - the economy is already highly integrated in international value chains;
 - the overall level of tariffs and protection is low, limiting the impact of further liberalization on income distribution (e.g., losses in importcompeting sectors);
 - the contribution of tariffs to government coffers is limited and the elimination of tariffs does not jeopardize the financing of public tasks.

Where does Switzerland stand in relation to these factors?

Taking into account its market weight and its integration into global supply chains, we find that Switzerland is relatively well positioned for unilateral tariff liberalization. On the one hand, Switzerland's international market weight is limited, with the country accounting for only 1.67% of global merchandise imports and 2.96% of global imports of commercial services (corresponding to a share of 1.9% of cumulated global merchandise and commercial services imports). At the same time, Switzerland's trade dependence is high, with a trade-to-GDP ratio of 65.8%. A synopsis of both indicators (enriched by countries' shares in world GDP, which is 0.8% in the case of Switzerland) suggests that Switzerland has a highly integrated, trade-dependent economy, but a limited market weight and thus a limited potential to extract trade concessions in reciprocity-based negotiations. This is illustrated by its position in the bottom left-hand corner of Figure 1, which includes all G20 members and selected other economies, representing together approximately 90% of global GDP.

The strong integration of Swiss manufacturing in global value chains is also reflected in the relatively high import content of Swiss exports (23.2%) compared to its main competitors from the European Union, Japan, the United Kingdom or the United States (see Figure 2).





and commercial services imports in %



(i) data on merchandise and services imports: WTO, World Trade Statistical Review 2023, Tables A6 and A7, data for 2022; (ii) trade-to-GDP ratio: WTO, Trade Profiles 2023; averages for 2020-2022 (US: 2019-2021); (iii) GDP in current US dollars: World Bank, Indicator "GDP (current US\$)", code NY.GDP.MKTP.CD (data for TW: WTO, Trade Profiles 2023). Data refer to 2022 where available, otherwise the latest available values have been used.



Data source:

OECD, Data series "Import content of exports", total, % of gross exports, 2020 (https://data.oecd.org/chart/7ei0)

Looking at the level of applied MFN tariffs in 2021, Switzerland's tariff pattern is characterized by high MFN applied rates on agricultural imports and low MFN applied rates on imports of industrial goods – a feature it shares with its partners in the European Free Trade Association (EFTA), Norway and Iceland (see Figure 3). These high agricultural tariffs fulfil a politically intended protective function for the Swiss agricultural sector, which also limits the scope for concessions in reciprocal trade negotiations, let alone unilateral tariff reductions in domestically relevant segments of this sector. The situation is quite different with regard to the already low import tariffs on industrial goods. Their dismantling is unlikely to lead to a major shift in demand from domestic to foreign producers and thus to politically problematic distributional effects (for example, through increased competitive pressure on import-competing sectors and their factor incomes). Accordingly, Switzerland is well positioned internationally for a reduction in industrial tariffs – similar to Singapore, Hong Kong, Norway and Iceland.

Figure 3:MFN applied rates on agricultural and non-agricultural imports,
2021



Trade-Weighted Average MFN Applied Rates (2021)

Note:

Korea and India are not shown in the graph because their MFN applied rates for agricultural products (KR: 89.3%; IN: 48.5%) are outside the graphically displayed data range.

Data source: WTO, World Tariff Profiles 2023, Data for 2021, Excel sheet "Summ_Trade_EN_ WTP23", series "Imports Profile" -> "Trade-Weighted Average MFN Applied AG/ Non-Ag (Per cent)" (https://www.wto.org/english/res_e/statis_e/daily_update_e/ tariff_profiles/TradeSummary_E.zip). If we look at the pipeline of unrealized Swiss FTA projects for which it would make sense to keep tariffs as negotiating mass, this pipeline is gradually being depleted as a large number of FTAs have already been concluded and the low-hanging fruit has been picked (see Sections 3.3 and 6.6 for more details).

As far as revenues from taxes on international trade are concerned, an international comparison (see Figure 4) suggests that the Swiss government budget is not heavily dependent on them. According to World Bank data, taxes on international trade accounted for only 0.92% of revenues in 2021 in the Swiss case, a figure broadly in line with the OECD average (0.88%) and well below the global average $(3.2\% \text{ in } 2020).^{14}$ Add to this a generally healthy fiscal climate with low levels of debts and deficits and moderate taxes by international standards.





On the monetary front, Switzerland has its own currency, the Swiss franc. It can therefore conduct its own monetary policy. The IMF classifies the *de jure* exchange rate arrangement as free floating and the *de facto* exchange rate arrangement as a crawl-like arrangement, taking into account past interventions by the Swiss National Bank.¹⁵ Under these conditions, it can be assumed that any macroeconomic imbalance resulting from unilateral liberalization could be

¹⁴ It should be noted that due to specific definitions, these figures are not comparable with Swiss national data (which are presented in more detail in Section 3); see IMF (2014) for definitions and methodology, in particular pp. 84ff on the definition of revenue and pp. 100ff on the definition of taxes on international trade.

¹⁵ See IMF (2023a, pp. 3693ff) for details.

absorbed by exchange rate adjustments. In any case, given the safe-haven nature of the Swiss franc, the challenge for Swiss monetary policy has traditionally been to manage upward pressures rather than to avoid depreciation risks. As for the Swiss labor market, it is characterized by above-average flexibility,¹⁶ which also contributes to the absorption capacity of any imbalance resulting from unilateral liberalization. However, such imbalances are highly unlikely in any case, given the already low MFN tariffs on industrial goods at the outset.

In summary, applying the considerations from the relevant literature and compared to many other economies, we find that Switzerland is relatively well positioned for unilateral liberalization. It is highly dependent on international trade and deeply integrated in international value chains, which generally argues in favor of open markets. At the same time, its limited market power, its already low MFN rates for industrial products (along with little flexibility in agricultural concessions) and the presence of an already large network of FTAs limit the potential for new agreements in reciprocity-based negotiations, making unilateral liberalization an alternative option for further liberalization. In addition, low dependence of the government budget on customs revenue will not prevent such liberalization.

3 Tariffs in Switzerland

3.1 The history of tariffs¹⁷

Customs duties have a long tradition in Switzerland. At the time of the Roman Empire, most of what is now Switzerland belonged to a customs district in which the *Quadragesima Galliarum*, the fortieth tax (=2.5%) of the Gallic provinces, was levied. Customs revenues continued to be of fiscal importance in later centuries. In Habsburg times, for example, the revenue from the Gotthard customs on the North-South axis through Switzerland alone exceeded the total revenue from the Habsburg possessions in Alsace. After the Habsburgs were pushed back, the cities began to pursue their own customs policies. The oldest customs tariff of the city of Lucerne, for example, dates from 1390.

In the first half of the 19th century, the tariff burden in Switzerland was relatively low by international standards – not only compared with traditionally protectionist neighbors such as Austria and France, but also with Great Britain and the German Customs Union. An early example of unilateral trade liberalization occurred in 1835, when the canton of Zurich abolished all cantonal customs duties and

¹⁶ See international comparisons in OECD (2020), in particular Figures 3.7, 3.8, 3.9, 3.10, 3.11, 3.12, 3.13, and BUNDESAMT FOR STATISTIK (2021, pp. 14f).

¹⁷ This section is based on POLLI-SCHÖNBORN (2015).

financed its budget exclusively through direct taxes. The Zurich system was regarded as exemplary, but was not imitated by other cantons, which continued to levy import, transit and export duties, including on trade between themselves. The centralization of the Swiss customs system took place only with the creation of the federal state (1848) and the creation of a single customs territory covering the whole of the Swiss Confederation, and only after tough negotiations with the cantons. The Confederation became entitled to collect customs duties at the national borders, while the cantons were fully compensated for the abolition of internal customs duties.

3.2 Characteristics of the current Swiss tariff system

The current Swiss tariff system has some notable features. One peculiarity is that, unlike in most other countries, all tariffs are specific duties and do not require customs valuation, as the duty is calculated on gross weight (weight of goods plus packaging) or, in rare cases, on pieces or liters.

The Swiss customs tariff is based on the Harmonized System¹⁸ of 2022 (HS22) and comprises 9,114 tariff lines at the 8-digit level. Tariffs are much higher for agricultural products than for industrial products. The latest *ad valorem equivalents* (AVE) of the trade weighted average MFN applied rates for 2021, calculated by the WTO, are 24.8% for agricultural products and 0.7% for non-agricultural imports.¹⁹ In its 2019 edition of the *Global Competitiveness Report*, the World Economic Forum (WEF) considered Switzerland to have the most complex tariff system of all 141 countries surveyed.²⁰

Switzerland has bound about 99% of its tariffs in the WTO, with only 83 tariff lines (at the HS 8-digit level) being unbound (gas, petroleum and related products) (WTO, 2022a, Section 3.1.3.3, No. 3.32, p. 63).

¹⁸ The Harmonized System (short form: HS; long form: Harmonized Commodity Description and Coding System) is a multipurpose international product nomenclature developed by the World Customs Organisation (WCO). In the HS, each product or product group is identified by a six-digit code. The HS is used by more than 200 countries and economies as a basis for their customs tariffs. Individual countries using the HS may add further digits to the HS numbers for internal purposes. The HS is normally updated every 5 to 6 years. Source and further information: World Customs Organisation (https://www.wcoomd.org/en/topics/nomenclature/overview/what-is-the-harmonized-system.aspx).

¹⁹ WTO, World Tariff Profiles 2023, data for 2021, Excel sheet "Summ_Trade_EN_WTP23", series "Imports Profile". It should be noted, however, that the methodology used by the WTO to calculate AVE is controversial (WTO, 2022a, Nos. 3.21-3.28, and in particular No. 3.25, p. 59f).

²⁰ See WEF (2019, pp. 15 and 536, index component 7.06; "complexity of tariffs"). For a general overview of Swiss tariff characteristics, customs procedures and requirements, see WTO (2022a, Section 3.1.1, pp. 55ff).

The Swiss tariff system also applies to the Principality of Liechtenstein as there has been a customs union between the two countries since January 1924.²¹

3.3 Trade preferences: FTAs and the Generalised System of Preferences

Today, imports from most countries can enter Switzerland on a preferential basis – under FTAs or under the Generalised System of Preferences (GSP) – provided that the preferential rules of origin are fulfilled.

At the time of writing (autumn 2023), Switzerland has a network of 35 FTAs with 75 countries or territories.²² According to data collected and presented by SECO in its publicly accessible *FTA Monitor*,²³ in 2021, the tariff savings realized by FTA partners on imports into Switzerland totaled CHF 2.4 billion. Despite FTAs being in place, a total of CHF 542 million in tariffs were levied on products that could have been imported duty-free under the FTA. There may be several reasons for this: rules of origin may not be met, or traders may, for whatever reason, prefer not to claim preferential treatment when importing into Switzerland. The realized and unrealized tariff savings by FTA partner are shown in Table 1.

In addition to preferential treatment under its FTAs, Switzerland grants duty-free market access to all industrial products originating in developing countries – with the exception of certain textiles and footwear – under the GSP for developing countries.²⁴ At the time of writing, a total of 119 countries are beneficiaries of the

²¹ Based on the Customs Treaty between Switzerland and Liechtenstein of 29 March 1923 (Vertrag zwischen der Schweiz und Liechtenstein über den Anschluss des Fürstentums Liechtenstein an das schweizerische Zollgebiet; SR 0.631.112.514), Switzerland and Liechtenstein maintain a customs union. The provisions of the abovementioned treaty stipulate that Swiss laws pertaining to customs as well as other federal legislation necessary for the implementation of the customs-free zone are also applicable in Liechtenstein. In addition, trade and customs treaties concluded by Switzerland with third parties (with the exception of the EEA countries) on trade in goods also apply to Liechtenstein. As a result of the customs union, the abolition of industrial tariffs discussed in this paper will apply not only to imports into Switzerland but also to imports into Liechtenstein.

²² A list of Swiss FTA partners is available at https://www.seco.admin.ch/seco/en/home/Aussenwirtschaftspolitik_ Wirtschaftliche_Zusammenarbeit/Wirtschaftsbeziehungen/Freihandelsabkommen/partner_fha.html.

²³ See the SECO website at https://www.seco.admin.ch/fta-monitor.

²⁴ Trade preferences under the GSP are based on Part IV (Trade and Development) of the GATT 1947 and, in particular, the so-called "Enabling Clause" (Differential and More Favorable Treatment, Reciprocity and Fuller Participation of Developing Countries; Decision of 28 November 1979, L/4903; https://www.wto.org/english/docs_e/legal_e/enabling_e.pdf). It stipulates that, notwithstanding the MFN clause in Art. I GATT, members may accord differential and more favorable treatment to developing countries without according such treatment to other contracting parties.

Swiss GSP.²⁵ In 2020, GSP treatment led to tariff savings of CHF 137.5 million on imports into Switzerland.

FTA partner	Realized tariff savings (CHF)	Non-realized tariff savings (CHF)	Partner's share in all realized tariff savings	
European Union	2,057,424,271	264,471,122	85.17%	
China	197,140,471	202,640,897	8.16%	
Turkey	55,352,539	22,093,830	2.29%	
United Kingdom	21,586,612	13,911,691	0.89%	
Saudi Arabia	11,009,003	248,645	0.46%	
Morocco	6,033,429	3,920,265	0.25%	
Japan	5,832,735	5,802,251	0.24%	
Norway	5,527,610	214,984	0.23%	
Colombia	5,277,230	1,746,729	0.22%	
Serbia	5,188,382	1,881,376	0.21%	
Ecuador	5,156,361	337,633	0.21%	
Bosnia and H.	4,726,760	949,995	0.20%	
Korea	4,560,516	3,350,182	0.19%	
Iceland	4,013,568	15,947	0.17%	
United Arab Emirates	3,543,088	656,416	0.15%	
South Africa	3,450,035	1,541,805	0.14%	
Mexico	2,970,244	2,090,846	0.12%	
Tunisia	2,327,469	3,522,437	0.10%	
All other FTA partners*	14,541,490	13,087,731	0.60%	
Total	2,415,661,814	542,484,783	100.00%	

Table 1:	Realized	and	non-realized	tariff	savings	under	Swiss	FTAs,
	2021 (imp	ports)					

Note:

*These are Bahrain, Peru, Ukraine, Israel, North Macedonia, Panama, Canada, Egypt, Costa Rica, Albania, Singapore, Philippines, Hong Kong, Oman, Lebanon, Chile, Jordan, Montenegro, Georgia, Faroe Islands, Palestine, Namibia, Kuwait, Qatar, Eswatini, Botswana, and Lesotho.

²⁵ Seventy-one developing countries and 48 LDCs benefit from these preferences, with LDCs enjoying duty-free and quota-free access for all products. The legal basis for the Swiss GSP is the Ordinance on Preferential Tariff Rates in favor of Developing Countries ("Tariff Preferences Ordinance"; in German: Verordnung über die Präferenz-Zollansätze zugunsten der Entwicklungsländer (Zollpräferenzenverordnung)); SR 632.911 (https://www.fedlex.admin.ch/eli/cc/2007/159/de#app1). The countries eligible for GSP treatment are listed in Annex 1 of the Ordinance.

Taking FTAs and GSP treatment together, nearly 200 countries or territories benefit from duty-free treatment for products that meet the relevant preferential origin requirements, making the "normal" non-preferential MFN treatment under Art. I GATT the exception rather than the rule. The only major countries and territories of origin of Swiss imports that do not benefit from an FTA or GSP treatment and therefore remain subject to MFN treatment are Australia, New Zealand, Russia, Taiwan and the United States.

3.4 The decreasing fiscal relevance of tariffs

The fiscal importance of import tariffs in Switzerland was high in the first decades after the founding of the federal state: in view of their role in financing the state, they were continuously increased and accounted for up to three quarters of federal revenue towards the end of the 19th century. Under the influence of emerging business associations, they were increasingly used not only for fiscal purposes but also for protectionist purposes, as had already been the case in neighboring countries (POLLI-SCHÖNBORN, 2015).

From the second half of the 20th century onwards, the tariff burden fell as a result of subsequent tariff reductions. The latter were due to Switzerland's membership in the GATT after 1966 (and later in the WTO), the conclusion of FTAs and tariff concessions under the GSP. At the same time, the federal government broadened its revenue base by increasing the contribution of other taxes such as federal direct tax, value-added tax or withholding tax.

Figure 5 shows the declining share of tariffs in government revenue since 1960. While in absolute nominal terms tariff revenue remained broadly constant at around CHF 1 billion per year (columns), their relative share of the central government's current revenues has declined (line): whereas in 1961 tariffs accounted for around 23.9% of the Swiss central government's current revenues, this share declined to just 1.61% in 2022. It is expected to halve to around 0.82% in 2024, when industrial tariffs are phased out and only tariffs on agricultural imports remain. Further small reductions in the share of tariffs in central government financing are expected in subsequent years. The respective shares of tariffs on agricultural goods imports and on industrial goods imports and their evolution over time are shown in Figure 6.



Data sources: (i) Data for 1990–2027: Data portal of the Swiss Federal Finance Administration, data series 1.1.7 (tariffs) and 1 (current revenue) (https://www.data.finance.admin. ch/); (ii) data for 1950–1989: Historische Statistik der Schweiz HSSO, data set U.18 "Einnahmen des Bundes nach Sachgruppen 1950-1989 in Mio. CHF" (https://hsso.ch/ de/2012/u/18).





Source:

Figure 6:

State Secretariat for Economic Affairs SECO/Federal Office of Customs and Border Security, 2023.

4 Initial project work for the abolition of industrial tariffs

On 24 February 2014, the Economic Affairs and Taxation Committee of the National Council (EATC-N)²⁶ adopted Postulate No. 14.3014 (WAK-N, 2014).²⁷ and a number of other proposals related to international trade.²⁸ This postulate instructed the Federal Council (i.e., the executive branch of government) to submit a report to Parliament on whether and how documents other than official certificates of origin could be recognized as proof of origin under the FTA between Switzerland and the EU. This postulate was motivated by the finding that EU suppliers are preventing parallel imports²⁹ into Switzerland by not issuing certificates of origin for trade outside official distribution channels. This practice is seen as allowing EU suppliers and their official distributors to seal off the Swiss market and skim off the high Swiss purchasing power, thus contributing to the problem of the "high-price island of Switzerland", to the detriment of Swiss buyers.

On 14 March 2014, the Federal Council stated in its response to the postulate that a review of the existing legal and administrative conditions with regard to the obstruction of parallel imports was warranted. It therefore proposed that the postulate be adopted. On 19 March 2014, the National Council adopted the postulate.

On 22 June 2016, the Federal Council published the mandated report (BUNDESRAT, 2016), prepared by the State Secretariat for Economic Affairs (SECO), a federal office within the Federal Department of Economic Affairs, Education and Research (EAER). In its report, the Federal Council emphasized that there was no isolated factor that increased the cost of (parallel) imports or that was solely responsible for the Swiss "high-price island." While price levels were strongly influenced by local wage and cost levels, the report also identified a mosaic of tariff and non-tariff trade barriers that led companies to close off the Swiss market. Based on these findings, the report listed a number of options for action

²⁶ A brief overview of the Swiss parliamentary system, as far as it is relevant for the readers of this article, can be found in Box 3 in Section 7.1.

²⁷ A postulate instructs the Federal Council to examine and report on whether to submit a bill to the Federal Assembly or to take a measure. A postulate may be submitted by the majority of the members of a committee, by a parliamentary group or by a member of the Assembly. The postulate is adopted if one Council adopts it (source: https://www.parlament.ch/en/%C3%BCber-das-parlament/parlamentsw%C3%B6rterbuch/ parlamentsw%C3%B6rterbuch-detail?Wordld=177).

²⁸ Motion 14.3011 (Cost reduction through an electronic customs procedure); Motion 14.3012 (Cost reduction through flexibility when crossing the border); Postulate 14.3013 (Advantages and disadvantages of a transition to an *ad valorem* duty system for finished industrial products) and Postulate 14.3015 (Simplified levying of value added tax on the import of goods. System of Denmark). These proposals are available at https://www.parlament. ch/en.

²⁹ Parallel imports are imports of goods that bypass the manufacturer's intended distribution structure (e.g., official sales channels).

that could help facilitate trade or reduce prices. Barriers to trade were identified, primarily customs duties and customs formalities. While border protection was relatively high, especially in the agricultural and food sectors, the report found that trade could also be facilitated in the industrial sector through autonomous tariff elimination. In addition to tariffs and customs procedures, the report also identified technical trade barriers (such as the exceptions to the "Cassis de Dijon" principle³⁰ and private restrictions on competition). On the same day as the publication of this report, the Federal Council published a report on new policies for growth in which it decided, among other things, to further analyze the feasibility of a unilateral abolition of industrial tariffs (BUNDESRAT, 2016a; 2016b).

On 20 December 2017, the Federal Council proposed a series of measures to reduce trade barriers, thereby contributing to the fight against the high price level in Switzerland.³¹ On the basis of this decision, on 7 December 2018, the Federal Council adopted a bill for a consultation procedure³² on an autonomous abolition of industrial tariffs and on a simplification of the tariff structure for industrial products. The consultation period lasted from 7 December 2018 to 21 March 2019. A total of 67 comments were received during the consultation procedure. The results of this consultation procedure were documented in a report by SECO (SECO, 2019).³³

Regarding the abolition of industrial tariffs, 53 participants were in favor, two were neutral and 12 were against. Those who were generally in favor included all the cantons that made their position known, four political parties – FDP.Die Liberalen (Liberals), the Green Liberal Party (GLP), the Christian Democratic

³⁰ The "Cassis de Dijon" principle was developed by the European Court of Justice (Judgment of the Court of 20 February 1979, Case 120/78). Switzerland adopted this principle autonomously in 2010. It stipulates that a product that complies with the technical regulations of the European Union, of a member state of the European Union or of the European Economic Area (EEA) and is lawfully placed on one of these markets may, in principle, be placed on the Swiss market without any further controls. Exceptions to this principle are only possible if there are overriding public interests at stake. An indicative negative list contains all the products excluded from the "Cassis de Dijon" principle. Further information can be found at https://www.seco.admin.ch/seco/en/home/Aussenwirtschaftspolitik_Wirtschaftliche_Zusammenarbeit/Wirtschaftsbeziehungen/Technische_Handelshemmnisse/Cassis-de-Dijon-Prinzip.html.

³¹ In addition to the abolition of tariffs on imports of industrial products, the package also included other ideas such as the elimination of tariffs on imports of selected agricultural products not produced in Switzerland, such as bananas and other exotic fruits, and a more efficient administration of the Cassis-de-Dijon principle by eliminating exemptions and replacing the authorization procedure for foodstuffs with a digital notification procedure. See EIDGENÖSSISCHES DEPARTEMENT FÜR WIRTSCHAFT, BILDUNG UND FORSCHUNG WBF (2017).

³² A consultation procedure (in German: Vernehmlassung) is a mandatory procedure in which a planned legislative project at federal level is assessed for accuracy, enforceability and acceptability. The full documentation of the consultation procedure on the abolition of industrial tariffs (Public Consultation No. 2018/87) is available at https://fedlex.data.admin.ch/eli/dl/proj/6018/87/cons_1.

³³ All responses received have been published and are available at https://www.fedlex.admin.ch/filestore/fedlex. data.admin.ch/eli/dl/proj/6018/87/cons_1/doc_6/de/pdf-a/fedlex-data-admin-ch-eli-dl-proj-6018-87-cons_1doc_6-de-pdf-a.pdf.

People's Party (CVP, now the Centre Party)³⁴ and UP – and the vast majority of business associations, chambers of commerce and companies. They welcomed both the financial and administrative relief that the measure would bring. The abolition of the requirement for proof of origin for products with Switzerland as their final destination was welcomed as a major relief – although intermediate goods would still need to be accompanied by certificates of origin if the final products in which they were incorporated were later to be exported and their preferential origin had to be proved.

Two major political parties opposed the proposal. The Social Democratic Party (SP) opposed it mainly because of the loss of government revenue, while the Swiss People's Party (SVP) criticized the unilateral nature of the measure, fearing the loss of a bargaining chip in future trade negotiations. Both parties argued that tariff liberalization should take place in the context of FTA negotiations. Trade unions also reacted negatively, lamenting what they saw as a marginal impact on the economy. Negative comments were also received from organizations in the agricultural sector. Although the proposed tariff abolition only concerned industrial products, they feared that the abolition of industrial tariffs would increase pressure to liberalize border protection in the agricultural sector. In their view, Switzerland would unnecessarily give up negotiating leverage and thus indirectly increase pressure on agricultural tariffs. Farmers' organizations were also concerned that the loss of state revenue would put pressure on the funds earmarked in the budget for the agricultural sector.

Perhaps surprisingly, there was only lukewarm support from the consumer organizations that commented on the bill (FRC, 2019; STIFTUNG FÜR KONSUMENTENSCHUTZ, 2019). While they did not oppose it, they doubted its effectiveness in combating the high-price island that is Switzerland. In their view, the bill would primarily benefit businesses, with only marginal benefits for consumers. Doubts were expressed as to whether the savings made by the business sector as a result of the abolition of tariffs and the reduction of administrative burdens would be passed on to consumers. Accordingly, they considered other measures to be more effective in the fight against high prices in Switzerland – in particular the "Fair Price Initiative", which was under public debate at the same time. It aimed to combat high prices in Switzerland through a series of measures against anti-competitive behavior by private companies.³⁵

The second element – the proposed simplification of the customs tariff structure – was supported by 40 respondents. They saw it as a measure that would

³⁴ The CVP, however, made it clear in its response that it considered other tax reform projects to be a higher priority for the party (CVP, 2019).

³⁵ See BUNDESRAT (2019b) for details.

particularly benefit small and medium-sized enterprises (SMEs), which often lack the knowledge to classify goods correctly. Only two participants (both from the agricultural sector) opposed the proposed simplification on the grounds of transition costs.

On 27 November 2019, the Federal Council took note of the results of the consultation procedure. In view of the generally positive response from most participants, the Federal Council did not make any changes to its original proposal which was the subject of the consultation and submitted the dispatch³⁶ containing the legislative proposal on the abolition of industrial tariffs and the simplification of the Tariff Code to Parliament for deliberation. The parliamentary procedure is the subject of Section 7.

5 The substance of the reform: Autonomous abolition of industrial tariffs and simplification of the tariff structure

Formally, the reform consists of a law amending Annexes 1 and 2 of the Swiss Customs Tariff Act (CTA).³⁷ These annexes make up the Swiss General Tariff,³⁸ a 657-page document containing the applied tariff rates for all products and other technical specifications (Annex 1) as well as tariff rate quotas (Annex 2). On the basis of Article 15 of the CTA, the Federal Council adopted on 15 February 2023 a 263-page ordinance containing all the amendments to the Swiss General Tariff that will enter into force on 1 January 2024.³⁹

³⁶ See BUNDESRAT (2019). A dispatch (in German: *Botschaft*) from the Federal Council to the Federal Assembly (Parliament) is a document containing an explanation of the bills it has drafted, i.e., new laws, amendments to laws, federal decrees and international treaties that must be submitted to the Federal Assembly for approval.

³⁷ In German: Zolltarifgesetz (ZTG). The CTA is available in the Systematic Compilation of Swiss Law (Systematische Rechtssammlung; SR) under the reference number SR 632.10. An English translation of the CTA is available at https://www.fedlex.admin.ch/eli/cc/1987/1871_1871_1871_1871_18. enacting the reform has been published in the Official Compilation (Amtliche Sammlung; AS) under the reference number AS 2022 119 (https://www.admin.ch/opc/de/official-compilation/2022/119.pdf).

³⁸ The Swiss General Tariff (in German: Schweizer Generaltarif) is published on the website of the Federal Office for Customs and Border Security (FOCBS) in its current version of 1.1.2022 (reflecting tariffs applicable until 31 December 2023) at https://www.bazg.admin.ch/dam/bazg/de/dokumente/verfahren-betrieb/grundlagen-undwirtschaftsmassnahmen/zolltarif/tares/Generaltarif_2022.pdf.download.pdf/Generaltarif_2022.pdf.

³⁹ Ordinance of 15 February 2023 on the Amendment of the Customs Tariff in Annexes 1 and 2 to the Customs Tariff Act and on the Adaptation of Decrees in Connection with this Amendment, AS 2023.86 (in German: Verordnung vom 15. Februar 2023 ibber die Änderung des Zolltarifs in den Anhängen 1 und 2 zum Zolltarifgesetz und über die Anpassung von Erlassen im Zusammenhang mit dieser Änderung). The amended customs tariffs applicable as from 1 January 2024 are set out in Annex 1 to the Ordinance. It is available on the BAZG website at https://www.bazg.admin.ch/dam/bazg/de/dokumente/verfahren-betrieb/grundlagen-und-wirtschaftsmassnahmen/zolltarif/ tares/Verordnung%20%C3%BCber%20die%20%C3%BCberdie%C3%ALdnerung%202023%20(IZA).pdf.download.pdf/verordnung%C3%BCberdie%C3%ALdnerungg&Zolltarifs.pdf.

In substance, the reform consists of two key elements: the abolition of applied tariffs on all industrial products and a simplification of the Swiss General Tariff.⁴⁰

5.1 The abolition of applied tariffs on all industrial products

The reform provides for the abolition of all import duties on industrial products. It will enter into force on 1 January 2024. This means that Switzerland will reduce the applied tariff rate to zero for all industrial products by adjusting the relevant rates of the General Tariff in Annex 1 of the CTA on that date. Industrial products are understood to include all goods in Chapters 25-97 of the Harmonized System with the exception of agricultural products⁴¹ (including animal feed) and fishery products. The goods for which tariffs will be eliminated include both inputs for production processes (capital goods, raw materials, semi-finished products) and consumer goods (e.g., bicycles, cars, household appliances, clothes or shoes).

The abolition of applied industrial tariffs does not entail any changes to existing international agreements (WTO, FTAs). This also means that bound tariffs according to Switzerland's Goods Schedule LIX at the WTO will remain unchanged and will therefore not be abolished. In theory, therefore, Switzerland remains legally able to reintroduce applied industrial tariffs at a later date up to the level bound in the WTO or FTAs.⁴² The only way for trading partners to remove this remaining legal uncertainty is to conclude an FTA with Switzerland. In other words, even after the abolition of industrial tariffs, the incentives to conclude FTAs with Switzerland will remain in the industrial goods sector, not to mention other areas such as agricultural market access, services, intellectual property rights (IPR), investment and other issues typically covered in modern FTAs.

⁴⁰ A full overview of the reform and its context can be found in the Dispatch of the Federal Council on the Modification of the Customs Tariff Act (in German: *Botschaft zur Änderung des Zolltarifgesetzes (Aufhebung der Industriezölle) vom 19. November 2019*; 19.076). It was published in the Federal Gazette (in German: *Bundesblatt*; BBI) under reference No. 2019 8479, hereinafter referred to as BUNDESRAT (2019).

⁴¹ These exceptions are as follows: In Chapter 35, caseins (tariff numbers 3501.1010, 3501.1090, 3501.9011, 3501.9019, 3501.9091, 3501.9099), albumins (tariff numbers 3502.1110, 3502.1190, 3502.1910, 3502.1990), dextrins (tariff numbers 3505.1010, 3505.1090, 3505.2010) and adhesives (3506.9910); in Chapter 38, finishing agents and dye carriers on the basis of starch and starch derivatives (tariff heading 3809.1010), industrial monocarboxylic fatty acids, acid oils from refining and industrial fatty alcohols (tariff headings 3823.1110, 3823.1210, 3823.1910) and binders as well as certain chemical products and preparations (3824.1010, 3824.9991, 3825.9010).

⁴² Switzerland's commitments under the WTO Agreements are reflected in Schedule LIX (available on the WTO website at https://www.wto.org/english/tratop_e/schedules_e/goods_schedules_e.htm). Information on Swiss FTAs is available on the website of SECO (https://www.seco.admin.ch/seco/en/home/Aussenwirtschaftspolitik_Wirtschaftliche_Zusammenarbeit/Wirtschaftsbeziehungen/Freihandelsabkommen.html).

Tariffs on agricultural products will also remain unchanged. The current system of specific duties will not be modified either.

On the basis of the Customs Treaty of 29 March 1923 between Switzerland and Liechtenstein, both the abolition of customs duties on industrial products and the simplification of the tariff structure will also apply to imports into Liechtenstein.

5.2 The simplification of the Swiss General Tariff

The Swiss customs tariff contains a total of 6,408 individual eight-digit tariff numbers (tariff lines) in chapters 25 to 97 (industrial products). While the first six digits are internationally standardized according to the Harmonized System, the last two digits are defined by Switzerland.

The current customs tariff structure has grown historically and contains many subdivisions at the national eight-digit level. The eight-digit subdivisions allowed tariffs to be differentiated according to specific product characteristics such as unit weight, intended use, processing or finishing. With the abolition of all industrial tariffs, these different eight-digit tariff numbers will in most cases lose their original purpose. Accordingly, most of the eight-digit subdivisions will be eliminated, reducing the total number of tariff numbers from 9,114 to 7,511.⁴³ This will make it easier for businesses to identify the correct tariff number.

Technically, the simplification of the tariff structure will be implemented through an adjustment of the General Tariff in Annex 1 of the CTA, too. As with the elimination of industrial tariffs, the simplification of the tariff structure will be limited to industrial products, while the tariff structure in the agricultural sector will remain unchanged.

The two parts of the reform – the elimination of industrial tariffs and the simplification of the tariff structure – are materially linked. Since in many cases the existing eight-digit tariff lines are subject to different tariff rates, a simplification of the tariff structure without a simultaneous abolition of industrial tariffs would be extremely costly. The tariffs for the merged tariff lines would have to be reassessed and possibly renegotiated in the WTO under Article XXVIII GATT. It would therefore have been difficult to separate the simplification of the tariff structure from the abolition of industrial tariffs.

⁴³ The tariff lines affected by the simplification will be removed from the general tariff. Those eight-digit tariff numbers that are still required by law or ordinance will not be removed. These include tariff numbers required for the collection of mineral oil tax or automobile tax as well as for export control purposes (e.g., military goods) and the implementation of sanctions.

Table 2 shows the interaction between the abolition of tariffs and the simplification of the tariff structure for the illustrative example of reciprocating piston engines of a kind used for the propulsion of vehicles of Chapter 87. The first column shows the new tariff numbers after 1 January 2024, which consist only of the first six digits (according to the internationally agreed Harmonized System). The former Swiss-specific seventh and eighth digits have been replaced by "00" as a result of the simplification of the Swiss General Tariff. As can be seen in the second column, all tariffs have also been reduced to 0.00. The third column shows the previous tariff numbers with the Swiss-specific divisions (7th and 8th digits), while the fourth column shows the previous tariff rates which differed between the various 8-digit positions.

 Table 2:
 Illustrative example: Comparison of old versus new tariff numbers and rates

1.1.2024	1.1.2024	1.1.2022 Tariff	1.1.2022 Duty		Text E
Tariff					
NEW					
	.	•		×	
				-	reciprocating piston engines of a kind used for the propulsion of vehicles of Chapter 87
8407.3100	0.00	8407.3100	46.00		of a cylinder capacity not exceeding 50 cc
8407.3200	0.00	8407.3200	46.00		of a cylinder capacity exceeding 50 cc but not exceeding 250 cc
8407.3300	0.00	8407.33			of a cylinder capacity exceeding 250 cc but not exceeding 1000 cc
		8407.33 10	80.00		for motor vehicles
		8407.33 20	47.00		for motorcycles
		8407.33 90	27.00		other
8407.3400	0.00	8407.34			of a cylinder capacity exceeding 1000 cc
		8407.34 10	80.00		for motor vehicles
		8407.34 20	22.00		for tractors
		8407.34 90	21.00		other
8407.9000	0.00	8407.90		-	other engines

6 Expected effects of the reform⁴⁴

6.1 Effects on government revenue

According to the Federal Council's 2019 dispatch, the abolition of industrial tariffs was expected to result in a reduction of tariff revenue in the order of CHF 541 million, based on tariff revenue in 2018. According to the 2022 figures, the reduction in gross tariff revenue would amount to CHF 681.7 million. The net reduction would be slightly lower, expected to be around CHF 600 million. The

⁴⁴ This section is largely based on BUNDESRAT (2019, Chapter 6, pp. 8495ff).
difference is due to refunds.⁴⁵ The loss of tariff revenue on industrial products would thus amount to around 0.7% of total federal revenue. Slightly lower revenues would also result from value-added tax (VAT) and automobile tax, as these taxes are levied not only on the value of goods but also on ancillary costs, including customs duties paid. Accordingly, the Federal Council's dispatch assumed an annual revenue loss of around CHF 21 million (VAT) and around CHF 0.5 million (automobile tax) due to the lower tax base.

These revenue losses have to be set against possible revenue gains from the stimulation of economic activity that is likely to result from the abolition of industrial tariffs. A model simulation in this respect suggested that the additional economic activity generated would lead to higher tax revenues. According to the estimates for the aggregate state budget at the time, about 30% of the lost customs revenue was expected to be compensated in the medium term. It was assumed that slightly more than half of the additional revenue would go to the federal government and slightly less than half to the cantons and municipalities.

6.2 Expected tariff savings

As mentioned above, Switzerland's unilateral elimination of tariffs on industrial goods will result in gross tariff savings of CHF 681.7 million (basis: 2022). Interestingly, almost three quarters of these savings will be realized on imports from FTA partner countries (CHF 505.5 million, or 74.2% of the total savings). This figure is surprising at first sight, as one would have expected the FTA partner countries to have already realized such savings thanks to preferential treatment. However, as noted above, in some cases the obstacle of rules of origin and related procedures, or the cost of complying with them, prevents traders from realizing tariff savings under FTAs.

The same holds for imports from GSP beneficiary countries. Accordingly, this group will account for a further CHF 145.8 million in tariff savings (21.4% of the total). Apart from the rules of origin, another reason for the substantial tariff savings of this group as a result of the abolition of Swiss industrial tariffs is that certain textile imports have so far been partially excluded from the Swiss GSP and Swiss tariffs on these products have remained relatively high. As several GSP beneficiary countries have a strong export position in textiles, these countries stand to gain considerably. For example, tariff savings on imports from Bangladesh will amount to CHF 42.7 million. This is much higher than the savings that generally more important trade partners such as Italy (CHF 26.2 million) or France (CHF

⁴⁵ Such refunds are made in processing traffic (in accordance with Art. 12 of the Customs Act, SR 631.0) or in situations such as double customs clearance, foreign returned goods, and so on.

13.8 million) may expect (based on 2022 data). The tariff savings on imports from Bangladesh will also be higher than the savings on imports from the United States (CHF 18.8 million), even though the United States is one of Switzerland's largest trading partners and, at the same time, the most important trading partner with which Switzerland has no FTA and whose exports to Switzerland are therefore still subject to the normal MFN tariffs. Figure 7 shows the distribution of gross tariff savings by trading partner.





Data source:

Swiss Impex database

6.3 Administrative facilitations

In addition to the fiscal relief, the abolition of industrial tariffs is expected to reduce the administrative burden on companies. The import clearance of a product requires a number of administrative procedures, such as the customs declaration, the selection of the appropriate customs procedure, the import procedure itself, the payment of the customs debt and the archiving of all the necessary documents. Although these procedures will in principle remain in place after the abolition of industrial tariffs, the administrative relief resulting from the reform has been estimated at CHF 100 million for 2016, which represents 20% of the total administrative burden measured for customs clearance (MEIER and FREY, 2017; 2018). As several aspects have not been taken into account in this estimate,⁴⁶ this CHF 100 million is considered to be the lower limit of the administrative relief expected from the abolition of industrial tariffs.

The administrative burden on imports is significantly higher when proofs of origin are required or when preferential customs clearance is used under an FTA or the GSP (see Box 1 on rules of origin). The unilateral abolition of industrial tariffs will therefore free companies from paperwork and give them more flexibility in their sourcing decisions, as the origin of a product will no longer be relevant⁴⁷ for imports of industrial products remaining in Switzerland. However, the rules of origin will remain relevant if the imported products are to be processed in Switzerland with the benefit of cumulation of origin before being re-exported to another country under the preferential terms of an FTA. In such cases, the origin of inputs and the associated documentation requirements remain relevant. Proofs of origin will also continue to be required for unaltered re-exports, for example, imports from the European Union as originating goods that are later re-sold to the European Union.

⁴⁶ These include the time and effort for choosing the right procedure, the risk of errors, fines, staff training and reduced flexibility in purchasing goods.

⁴⁷ These facilitations will also apply to other special procedures which allow duty-free importation of goods but are subject to additional obligations. These include provisional assessment due to missing or invalid proofs of origin, inward and outward processing, customs concessions as well as the special procedure for temporary admission and customs relief depending on the intended use. For details, see BUNDESRAT (2019, p. 8504).

Box 1: Rules of origin

FTA preferences apply only to products of origin of contracting parties. Similarly, GSP preferences apply only to products of origin from GSP beneficiary countries. In order to benefit from preferential treatment, importers must prove that their products are of preferential origin and comply with the so-called rules of origin. These rules are laid down in each individual FTA or in the Ordinance on the rules of origin for tariff preferences in favor of developing countries (GSP). Their purpose is to prevent goods from third countries from being imported under preferential conditions via an FTA partner or a GSP-eligible developing country without having undergone substantial processing or value added in the partner country.

The decisive criterion for "origin" is usually the degree of processing of a product in the country of origin. The degree of processing required for a product is determined on the basis of different types of rules. A commonly used rule is the tariff heading change rule, according to which processing is considered sufficient if the processed product falls under a different tariff heading than its components. Alternatively, modern FTAs often require that a certain share of value added or specific processing steps take place in the country of origin. The preferential origin is documented by a proof of origin. In order to benefit from the tariff preferences, this proof must be issued by the supplier and presented upon importation into Switzerland. It must be archived for five years and be available at any time upon request by the Federal Office for Customs and Border Security (FOCBS).

Given the administrative requirements associated with rules of origin, some firms may choose to forgo preferential treatment and pay tariffs, particularly in sectors where tariffs are lower than the cost of complying with rules of origin. Rules of origin may also contribute to the problem of trade diversion generally associated with FTAs (see Section 2.1): They may induce firms to source their inputs not from the most efficient supplier but from a less efficient supplier located in a country of origin that allows the producer to claim preferential origin when re-exporting the finished products, including through so-called cumulation of origin.

6.4 Expected economic effects

On behalf of the Federal Council, ECOPLAN (2017) conducted a model simulation to provide a quantitative assessment of the macroeconomic impacts.

Based on figures for 2016, the estimates resulted in savings of CHF 490 million due to the abolition of customs duties and administrative relief of CHF 100 million (about one fifth of the total administrative expenditure of companies related to customs clearance). Due to additional indirect effects (e.g., productivity gains), the macroeconomic impact was expected at the time to exceed the direct savings by CHF 270 million. In total, the positive impact on the economy was expected to amount to CHF 860 million (see Figure 8). The actual impact is likely to be higher as the amount of industrial tariffs that will be abolished has increased in the meantime. In addition, the estimates on administrative relief did not take into account any cost savings resulting from the simplification of the tariff code.





Specifically, the study found a slight increase in GDP (estimated at +0.1%) and higher incomes as a result of the unilateral abolition of Swiss industrial tariffs. The savings in tariffs and administrative costs should lead to lower trade and production costs. These savings are expected to benefit firms and – assuming competition is functioning – private individuals, rather than accruing to the state as tariff revenue. Thus, there is a shift in rents. In addition, the administrative relief is expected to generate additional, indirect welfare effects through efficiency gains. The administrative relief will not only benefit importing firms in Switzerland, but also foreign exporters due to the (at least partial) elimination

of origin requirements. For the latter, the strategic choice of suppliers or supplier countries to avoid import duties will become less relevant. As a result, trade relations are expected to become more efficient, which should have a positive impact on productivity and innovation. GDP per capita is estimated to increase by around +0.1 %. The lowering of barriers to entry into the Swiss market is also expected to increase imports by 0.5 %, which in turn will intensify competition in the Swiss market.

Overall, the efficiency gains and increased competition should strengthen the competitiveness of the Swiss economy. This effect is particularly important as the Swiss economy is highly integrated into global value chains. Companies are therefore dependent on imported raw materials or semi-finished products. The abolition of industrial tariffs therefore strengthens export competitiveness and is expected to increase exports by 0.4%.

Box 2: Economic studies accompanying the project

In the run-up to the project, a number of external studies were commissioned on the main issues.⁴⁸ These include MEIER and FREY (2017), which examined the reduction of administrative burdens resulting from a unilateral abolition of customs duties, in particular with regard to reduced compliance requirements for rules of origin.⁴⁹ The study by ECOPLAN (2017), the results of which are reported in more detail in this section, estimated the total economic impact measured for 2016 at CHF 860 million.⁵⁰ BERDEN et al. (2017) examined the extent to which Switzerland's bargaining position in future negotiations with potential partners would be impaired because industrial tariffs would no longer be a bargaining chip. They concluded that alternative concessions would be possible and that FTAs would still allow future FTA partners to obtain a guarantee of duty-free treatment of imports.⁵¹ MAHLSTEIN et al. (2017) analyzed the experiences of other countries with unilateral tariff reductions that confirmed the positive economic effects of tariff dismantling.⁵² Further studies have been conducted on the role and impact of non-tariff barriers, ⁵³ as well as on the potential for action on high agricultural prices.⁵⁴

⁴⁸ For a brief overview of the studies and their main findings, see MULLER (2018).

⁴⁹ For detailed results, see MEIER and FREY (2017); for a brief summary, see MEIER and FREY (2018).

⁵⁰ For detailed results, see EcopLaN (2017); for a brief summary, see MULLER and STEINMANN (2018). For an earlier analysis, see MOSER and WERNER (2015).

⁵¹ For detailed results, see BERDEN et al. (2017); for a brief summary, see BERDEN et al. (2018).

⁵² For detailed results, see MAHLSTEIN et al. (2017); for a brief summary, see SCHROPP and MAHLSTEIN (2018).

⁵³ See MEYER ET AL. (2017), MEYER-LANZ and LANGHART (2018), MOSER and NICKLISCH (2017) and MOSER and NICKLISCH (2018).

⁵⁴ For detailed results, see CHAVAZ et al. (2017); for a brief summary, see CHAVAZ and PIDOUX (2018).

The abolition of industrial tariffs is also expected to lead to lower import prices, reinforced by administrative relief and increased competition. The price effects are expected to be passed on to consumers under the assumption of functioning competition. The simulation model used took into account different levels of competition in different sectors. The estimates resulted in a decrease in general consumer prices for goods of between -0.1% and -2.6%, depending on the product group. For the aggregate consumer price level, a decrease of 0.1% was assumed. According to the model, this relatively small reduction is due to a parallel slight increase in prices of services and agricultural products and food, as productivity and aggregate demand rise. Extrapolated on the basis of nominal household consumption expenditure in 2016, this fall in prices would result in savings of CHF 350 million for consumers.

6.5 Effects on the administration

The measure is expected to enable the FOCBS to reduce its expenditure on preferential clearances and special procedures, as importers will increasingly switch to normal customs clearance, thus reducing the expenditure on providing information, authorizations, controls and verification procedures related to proofs of origin. The savings achieved will be used to maintain and strengthen border security.

Further simplifications will result from the abolition of temporary tariff suspensions in the textile sector and the abolition of the Expert Commission for Customs Tariff Matters. At the same time, some resources have been required for the oneoff amendments of ordinances and adjustments to the tariff structure in internal systems, for outreach and information activities related to implementation, and for monitoring the impact on prices. These implementation issues are discussed in more detail in Section 9.

6.6 Effects on future trade negotiations

Industrial tariffs are part of the bargaining mass in FTA negotiations. However, the weight of industrial tariffs within the portfolio of possible concessions has steadily decreased over time, given the increasing breadth of modern FTAs and

the already low level of MFN industrial tariffs in the case of Switzerland (but not only).⁵⁵

Switzerland's recent negotiating experience suggests that industrial tariffs are no longer a decisive bargaining chip in most FTA negotiations. Other factors such as agricultural tariffs, services, non-tariff barriers, intellectual property, investment or sustainability are becoming increasingly important. Moreover, since Switzerland has so far always committed itself to reducing preferential import tariffs for all industrial products to zero immediately and without transition periods, the loss of this bargaining chip affects the negotiation of new FTAs rather than the modernization of existing agreements. Moreover, as shown in Section 6.2, 74.2% of the savings from the unilateral abolition of industrial tariffs will be realized on imports from countries with which an FTA already exists. In other words, three quarters of the industrial tariffs collected have no transactional role as bargaining chips in trade negotiations.

Furthermore, and importantly, this unilateral dismantling of industrial tariffs does not lead to an adjustment of bound tariffs in the WTO (see above). Switzerland could therefore legally reintroduce tariffs on industrial products for non-free trade partners up to the maximum tariffs possible under WTO commitments. As a result, the additional legal certainty that trading partners can obtain through tariff bindings in the context of FTAs remains a bargaining chip and an incentive for both new and existing trading partners to enter into or maintain free trade relations with Switzerland. In principle, the situation in the industrial tariff area will now be similar to the situation in other FTA chapters (e.g., services) where trading partners mainly bind their status quo, often without creating additional market access.

These considerations are supported by a study by the World Trade Institute (BERDEN et al., 2017). According to this study, industrial tariffs are no longer the focus of interest for the majority of important potential negotiating partners (in 2018, 89% of imports of industrial products came from countries with which Switzerland has concluded an FTA). According to the study, the greatest challenge would be to negotiate with partners whose priority lies primarily in exporting textile products. The examples of other countries, such as Hong Kong, Canada, New Zealand, Norway and Singapore, also show that new FTAs can be successfully concluded even after the unilateral elimination of industrial tariffs (SCHROPP and MAHLSTEIN, 2018).

⁵⁵ There is a general trend towards lower MFN tariffs. According to SNOUSSI-MIMOUNI and DREVINSKAS (2023), the simple average MFN tariff applied by WTO members has fallen by 44%, from 13.2% to 7.4%, between 1996 and 2021. Over the same period, the average MFN tariff applied on a trade-weighted basis dropped by 47%, from 7.1% to 3.7%.

The relevance of the negotiating mass argument also depends on the pipeline of economically meaningful and politically realistic FTAs that could be negotiated in the future. Let us therefore take a brief look at the few major economies with which Switzerland still has MFN trade relations on both the import and export side: Australia, New Zealand, Russia, Taiwan and the United States. From this list, the United States is by far the most important Swiss trading partner. Switzerland has twice explored the possibility of an FTA with the United States, in 2005/2006 and again since 2018.56 However, a Swiss-US FTA seems unlikely in the near future given the fundamental divergences in agricultural trade policy and the general lack of interest of the current US administration in concluding classical FTAs. Divergences in agricultural trade policy could also hamper potential FTAs with Australia and New Zealand, where no negotiations are currently underway. With Russia (where negotiations started in 2011 and were suspended in 2014 following Russia's annexation of Crimea),⁵⁷ there is no prospect of a resumption in the near future, given recent international developments. An FTA with Taiwan also seems unlikely for other reasons.58

If we extend the analysis to important developing countries that benefit from the GSP when exporting to Switzerland, but for which Switzerland does not enjoy comparable preferences when exporting to them, FTA negotiations have been underway for a long time. This is the case for India (negotiations started in 2008), Vietnam (2012), Malaysia (2014) or Mercosur (2017).⁵⁹ The length of these negotiations reflects the increasing difficulty of concluding FTAs with significant partners that are acceptable both to the partner and an increasingly critical domestic public. The Swiss negotiating position includes strong offensive interests in agriculture – a combination that is difficult for several potential FTA partners to accept. Moreover, the challenge of domestic acceptance of FTAs was illustrated by the narrow margin by which the FTA with Indonesia was approved in the referendum on 7 March 2021 (51.7% approval rate),⁶⁰ despite support from most parties and stakeholders. Add to this a general global climate in which, for a variety of reasons, the trend towards new FTAs is slowing down.

These considerations suggest that the pipeline of economically meaningful and politically realistic FTAs is gradually emptying. Against this background, it would

⁵⁶ On this subject, see the Motion Graber 18.3797 on a possible FTA between Switzerland and the U.S (https://www.parlament.ch/de/ratsbetrieb/suche-curia-vista/geschaeft?AffairId=20183797).

⁵⁷ See the Federal Council's response to the Motion Freysinger 15.3626 on an FTA with Russia (https://www.parlament.ch/de/ratsbetrieb/suche-curia-vista/geschaeft?AffairId=20153626).

⁵⁸ See the Federal Council's response to the Interpellation Imark 20.3983 on a trade agreement with Taiwan (https:// www.parlament.ch/de/ratsbetrieb/suche-curia-vista/geschaeft?AffairId=20203983).

⁵⁹ See Section 11.2 in the Annex to Bundesrat (2023a) for the status of FTA negotiations.

⁶⁰ See https://www.bk.admin.ch/ch/d/pore/va/20210307/det640.html.

be difficult to argue in favor of Switzerland maintaining its industrial tariffs and the resulting fiscal and administrative burdens on its economy just to maintain a bargaining chip for possible future FTA negotiations.

6.7 Preference erosion

One issue mentioned in the Federal Council's dispatch, which was also part of the international reaction to the reform (see Section 8), was the question of "preference erosion" (BUNDESRAT, 2019, p. 8499) – i.e., the comparative loss of competitive advantage of countries currently exporting to Switzerland under the preferential terms of an FTA or the GSP compared to third countries previously subject to MFN tariffs that would now be abolished.

From the point of view of countries that used to export to Switzerland under preferential conditions, the reform may indeed lead to some loss of a preferential margin. However, this does not mean that preferential trading partners will lose out as a result of the reform. In fact, if we look at the figures on who will benefit, the opposite seems to be true: almost three-quarters of industrial tariffs are levied today on imports from partners with which an FTA already exists. As a result, the latter will benefit most from the reform (see Section 6.2). In addition, their exporters will be partially freed from rules of origin requirements and the associated administrative costs and sourcing restrictions.⁶¹ In addition, Swiss MFN tariffs on industrial products are generally low, so that significant shifts in competitive positions or market shares due to unilateral tariff elimination seem rather unlikely. At best, such shifts could affect products that were previously subject to both relatively high MFN tariffs and exceptions or limitations to GSP preferences (e.g., certain textiles).

From the Swiss perspective, any preference erosion resulting from the reform is equivalent to the elimination of welfare-reducing trade diversion in Vinerian terms (see the discussion in Section 2.1) and is therefore economically positive.

7 The (tortuous) road to parliamentary approval

Section 7 documents the domestic parliamentary discussion and decision-making process through which the project passed. It is aimed at readers who are interested

⁶¹ This applies to exports of products that will definitely remain in Switzerland. Proofs of origin will continue to be required for exports of inputs used in Switzerland to manufacture products that are subsequently exported under FTAs (see Section 6.3).

in the domestic approval processes of such a reform using the specific example of Switzerland.

7.1 Brief overview of the political process in Switzerland

After the dispatch containing the legislative proposal for the unilateral abolition of Swiss industrial tariffs was approved by the Federal Council and submitted to Parliament on 27 November 2019, a long (and rather tortuous) journey through the multi-stage parliamentary approval process began. For a general overview of the Swiss parliamentary process, see Box 3).⁶²

Box 3:	Basic functioning of the Swiss parliamentary process:
	Simplified overview ⁶³

Legislative proposals are usually submitted to Parliament by the Federal Council – the executive branch of the Swiss government – in the form of a dispatch. The Swiss Parliament, also known as the Federal Assembly, consists of two chambers with equal powers. The National Council has 200 seats, allocated to the cantons according to population, while the Council of States has 46 members (two elected by each canton, large and small, and one by each of the six historic half-cantons). The Federal Assembly meets in plenary session four times a year (spring, summer, autumn and winter sessions), each session lasting three weeks. The short sessions allow Swiss parliamentarians to exercise their political functions on a part-time basis and alongside other activities (as entrepreneurs, lawyers, doctors, employees, etc.), which is perfectly legitimate in the Swiss system.

⁶² For an overview of the process of this matter (registered under No. 19.076), see https://www.parlament.ch/de/ ratsbetrieb/suche-curia-vista/geschaeft?AffairId=20190076.

⁶³ More detailed information on parliamentary procedure in Switzerland is available in all Swiss national languages and in English in the "Lexicon of parliamentary terms" on the website of the Swiss Parliament at https://www. parlament.ch/en/%C3%BCber-das-parlament/parlamentsw%C3%B6rterbuch.

Box 3: contd.

Each of the two chambers has several specialized committees for different policy areas. They examine a legislative proposal before it is put to the vote in the plenary session of a chamber. Committee meetings take place between plenary sessions. In the case of the abolition of industrial tariffs, the relevant parliamentary committees are the Economic Affairs and Taxation Committees of the National Council (EATC-N) and the Council of States (EATC-S). Unlike plenary sessions, which are open to the public, committee meetings are confidential. However, the committees usually issue media releases on their meetings, summarizing important debates.

The parliamentary course of a legislative proposal usually begins in the specialized committee of the Council to which the project is first assigned by decision of the Council Presidents (so-called first Council). The proposal is then submitted to the plenary of the first Council for approval. It is then discussed in the specialized committee of the second Council before being submitted to the plenary of the second Council for approval. The parliamentary approval process in each Council normally consists of three elements: (1) the introductory debate (where a Council decides whether there is a need for legislative action at all); (2) the detailed consideration of a bill (which follows the decision to introduce it) where a bill is discussed article by article; and (3) the vote on the bill in its entirety. The legislative process is completed when both Councils have accepted (or rejected) a legislative proposal. If the two Councils disagree, they must follow a procedure for resolving their differences.

Once a bill has been passed by both Councils, a 100-day referendum period usually begins, during which any voter who opposes the bill can collect signatures to put it to a public referendum. Fifty thousand voter signatures are required to trigger a referendum. If the 100-day referendum period expires unused, a bill is considered to have been definitively passed.

7.2 Debate in the EATC-N on 25 February 2020

The first committee to discuss the matter was the Economic Affairs and Taxation Committee of the National Council (EATC-N) on 25 February 2020. Following the debate, the committee proposed by 12 votes to 11 with one abstention that the Federal Council's proposal to abolish industrial tariffs should not be adopted (WAK-N, 2020).

According to the narrow majority that rejected the proposal, the risks associated with the proposal were too great and the benefits for the economy and consumers too small. According to the committee's media release, the majority felt that it would be inappropriate to withdraw such a large sum from the federal coffers. The majority also felt that the project had other serious disadvantages: Switzerland would lose bargaining power in the negotiation of new FTAs and pressure on agricultural tariffs would increase massively as a result. Moreover, it was doubtful whether consumers would actually benefit from lower prices, as tariff reductions would often only increase the margin for trade.

However, a strong minority of the EATC-N proposed to accept the bill. They were convinced that the abolition of industrial tariffs would strengthen Switzerland as a business location and the competitiveness of Swiss companies. They argued that there had been pressure on agricultural tariffs for years, independently of the discussion on industrial tariffs. In particular, the minority emphasized the administrative relief that the measure would bring and the benefits for consumers.

7.3 Debate in the plenary session of the National Council on 4 June 2020

The rejection of the legislative proposal by the EATC-N did not bode well for the subsequent debate in the plenary session of the National Council. Indeed, the plenary session followed the majority of the EATC-N and rejected the legislative proposal by a majority of 108 votes to 83, with four abstentions.⁶⁴

Opponents rejected the proposal because of the fiscal losses to the central government budget – particularly in light of the additional burden of the now emerging Covid-19 pandemic and the costs of other fiscal reforms. They cited what they considered to be a relatively small contribution to growth and price reductions, according to studies, and the loss of negotiating mass in future FTA negotiations. They were also concerned that tariff reductions would be used to increase sellers' margins rather than being passed on to consumers and other end users. It was also argued that the administrative relief would be limited, as certificates of origin would still be required in many cases. Still others criticized the fact that the abolition of tariffs was not limited to "sustainable" products.

The minority in favor of the bill reiterated the arguments put forward in the Federal Council's dispatch. They emphasized the fiscal and administrative relief for economic operators (which had become particularly necessary in view of the

⁶⁴ A full transcript of the debate is available at https://www.parlament.ch/de/ratsbetrieb/amtliches-bulletin/ amtliches-bulletin-die-verhandlungen?SubjectId=49015. The results of the nominal vote are available at https:// www.parlament.ch/poly/Abstimmung/51/out/vote_51_20436.pdf.

economic difficulties caused by the pandemic). In their view, the already low industrial tariffs, which are mostly levied on imports from FTA partner countries, were hardly an indispensable bargaining chip in FTA negotiations, which nowadays cover much more than tariffs.

7.4 Debate in the EATC-S on 21 August 2020

The rejection of the bill by both the EATC-N and the plenary of the first chamber, the National Council, cast a shadow over the subsequent deliberations in the Council of States. And indeed, the series of defeats for this legislative proposal continued: on 21 August 2020, after an in-depth discussion, the EATC-S proposed by six votes to six, with the President casting the deciding vote, that the legislative proposal not be adopted. The arguments of both proponents and opponents were largely the same as in previous debates (WAK-S, 2020).

7.5 Debate in the plenary session of the Council of States on 23 September 2020

After the defeat in the National Council and in the EATC-S, the debate in the plenary session of the Council of States was the last chance of survival for this legislative proposal: If the plenary session of the Council of States had followed the proposal of the EATC-S and refused to enter into the introductory debate as well, the project would have definitely been killed. However, the plenary of the Council of States decided, after a detailed discussion, to enter into introduction. With 29 votes in favor and 14 against (with no abstentions), a fairly large majority supported the project. The plenary then instructed the EATC-S to examine the legislative proposal in detail.⁶⁵

7.6 Debate in the EATC-S on 19 November 2020

After the Council of States had approved the introduction of the bill, the EATC-S took up the detailed debate and also supported the Federal Council's position. In its overall vote, the EATC-S approved the bill by 8 votes to 5 (WAK-S, 2020a). The matter was now ready to be debated again in the plenary session of the Council of States.

⁶⁵ The transcript of the discussion is available at https://www.parlament.ch/de/ratsbetrieb/amtliches-bulletin/ amtliches-bulletin-die-verhandlungen?SubjectId=50292#votum13.

7.7 Debate in the plenary session of the Council of States on 2 December 2020

Shortly after the EATC-S approved the bill, the plenary session of the Council of States debated the bill again.⁶⁶ The arguments for and against the bill were largely unchanged from previous discussions. In the end, the Council of States approved the bill by 28 votes to 14, with one abstention.⁶⁷

7.8 Debate in the EATC-N on 11 January 2021

Following its adoption by the Council of States, the Federal Council's legislative proposal was returned to the National Council and the EATC-N. After their initial rejection, they had to deal with the proposal again in accordance with parliamentary procedures.

The EATC-N dealt with the matter on 11 January 2021. Not least because of the loss of revenue for the Confederation, the EATC-N now asked for more precise information on whether a better economic leverage effect could be achieved by abolishing only some of the industrial tariffs, e.g. the tariffs on raw materials and semi-finished products. The Commission also requested more information from the administration on other issues, including the introduction of a border tax adjustment system (in light of EU plans for a Carbon Border Adjustment Mechanism, or CBAM) before continuing the consultation (WAK-N, 2021).

7.9 Debate in the EATC-N on 18 May 2021

At its meeting on 18 May 2021, the EATC-N abandoned its initial opposition to the project. It proposed to approve the legislative proposal by 16 votes to 7 and to approve it unchanged by 15 votes to 7 with one abstention. For the majority, the economic benefits of the bill clearly outweighed the disadvantages. It rejected both a suspension (by 14 votes to 7, with two abstentions) and a referral back to the Federal Council, which would have been asked to propose a customs duty exemption for industrial goods according to sustainability criteria (rejected by 13 votes to 8 with one abstention). A motion for a staged abolition of industrial tariffs was also rejected (9 in favor, 14 against), but it would be submitted to the plenary session of the National Council as a minority motion. At the same meeting, the

⁶⁶ The transcript of the discussion is available at https://www.parlament.ch/de/ratsbetrieb/amtliches-bulletin/ amtliches-bulletin-die-verhandlungen?SubjectId=50866.

⁶⁷ The results of the vote are available at https://www.parlament.ch/poly/AbstimmungSR/51/out/ Abstimmung_51_4008.pdf.

committee decided by 11 votes to 5 with 7 abstentions to support a committee motion (21.3602) calling for the participation of Switzerland in the planned EU CBAM. Although the majority did not see a direct link between the abolition of industrial tariffs and this request, they nevertheless supported this committee motion independently (WAK-N, 2021a). The matter was now ready for debate in the plenary session of the National Council at the forthcoming session.

7.10 Debate in the plenary session of the National Council on 31 May 2021

The matter was originally on the agenda on Tuesday, 1 June 2021. However, on Monday, 31 May 2021, the Office of the National Council decided at short notice to cancel this item and to postpone it to the autumn session of 2021. A motion of order, asking to reinstate this item on the agenda for 1 June 2021, failed.⁶⁸ The brief debate on this motion suggests that the reason for the postponement was a (political) link that the Green-Liberal Party in particular made between the abolition of industrial tariffs and the introduction of a CBAM.⁶⁹

7.11 Debate in the EATC-N on 7 September 2021

The postponement of the matter to the autumn session created new delays and thus a new opportunity for the EATC-N to revisit the issue. After intense discussions, it narrowly stuck to its earlier motion in favor of a complete dismantling of industrial tariffs in one step.

During the discussion, the Commission had returned to the question of whether a staged abolition of industrial tariffs would be the better way forward. It discussed a proposal to abolish customs duties on industrial raw materials and semi-finished products only in a first step and to provide for the abolition of the remaining industrial customs duties in a second step, provided that federal finances allowed this and on condition that an evaluation by the Federal Council showed that the cost-benefit ratio of the first step was positive.

By 13 votes to 12, the Commission stuck to its original proposal of 18 May 2021 (see Section 7.9) to completely abolish industrial tariffs in a single step. For this majority, the structure of the customs tariff did not allow a clear separation between raw materials and semi-finished products on the one hand and industrial products on the other. A gradual abolition would therefore lead to unequal

⁶⁸ See https://www.parlament.ch/poly/Abstimmung/51/out/vote_51_22928.pdf.

⁶⁹ See https://www.parlament.ch/de/ratsbetrieb/amtliches-bulletin/amtliches-bulletin-die-verhandlungen?SubjectId =52880.

treatment, distortions and bureaucratic burdens instead of administrative relief for companies. In the view of the minority, a staged abolition of industrial tariffs would be appropriate not only in view of the tight federal finances but also in view of the leverage effect of the bill: the cost-benefit ratio of the first stage would be considerably higher than that of the – possible – second stage. Another minority did not want to leave the assessment of whether the cost-benefit ratio of the first stage was positive to the Federal Council alone. It supported only the first stage and wanted the Federal Council to submit a new dispatch to parliament at a later date if it decided to proceed with the second stage (WAK-N, 2021b).

7.12 Debate in the plenary session of the National Council on 15 September 2021

On 15 September 2021, the long-awaited debate took place in the plenary session of the National Council. There were three proposals on the table: (1) the majority's proposal to enter into introduction and accept the Federal Council's proposal as it stood); (2) the proposal of a minority not to enter into introduction (i.e., reject the Federal Council's proposal); and (3) another minority proposal which would have instructed the Federal Council to differentiate the duty exemption for industrial goods according to sustainability criteria. Only products with low CO2 emissions and products for which high minimum ecological standards have been set in accordance with the Federal Environmental Protection Act would have been exempt from industrial tariffs.

After a lengthy debate,⁷⁰ the National Council voted by 121 votes to 69 (with four abstentions) in favor of the Committee Majority to enter into introduction.⁷¹ It then rejected the minority proposal to differentiate industrial goods according to sustainability criteria, with 87 votes in favor and 108 votes against (no abstentions).⁷² With these decisions, the matter was now ripe for a vote on the bill in detail.

A majority proposed to adopt the bill as proposed by the Federal Council and already accepted by the Council of States. A minority (Minority I) proposed to limit the elimination of tariffs in a first step to raw materials and semi-finished products (thus excluding finished products and consumer goods from tariff elimination) and to authorize the Federal Council to eliminate the remaining industrial tariffs in a second step, subject to certain criteria and conditions. Another minority

⁷⁰ The transcript is available at https://www.parlament.ch/de/ratsbetrieb/amtliches-bulletin/amtliches-bulletin-dieverhandlungen?SubjectId=53915.

⁷¹ See https://www.parlament.ch/poly/Abstimmung/51/out/vote_51_23493.pdf.

⁷² See https://www.parlament.ch/poly/Abstimmung/51/out/vote_51_23494.pdf.

(Minority II) also proposed the staged approach, but – in contrast to Minority I – would have required the Federal Council to submit a new bill to Parliament for the subsequent elimination of the remaining tariffs.

The President of the National Council decided to hold a vote first to see which of the two minority proposals had more support. Then, the winning minority proposal and the majority proposal would be put to the vote. In the first of the two votes, Minority I prevailed over Minority II by 112 votes to 83 (with no abstentions).⁷³ The second vote resulted in a tie, with both Majority and Minority I receiving 97 votes.⁷⁴ In such a scenario, the President of the National Council (who normally abstains) also casts his vote (the so-called "casting vote"). As the President of the National Council voted in favor of the majority, the latter won by a narrow margin. In the concluding vote on the bill in its entirety, the bill was adopted by a clear majority of 106 votes in favor and 75 against (with 15 abstentions).⁷⁵

7.13 Final vote in both Councils on 1 October 2021

According to parliamentary rules, a so-called final vote on a bill is held in each Council after both Councils have completed their examination of a legislative proposal. The final vote usually takes place separately in each Council on the last day of the session. If both Councils approve the bill, it is considered to have been passed by the Federal Assembly. If one or both Councils reject the bill, it has not been passed.

On the morning of 1 October 2021, the final vote took place in both the National Council and the Council of States. The National Council adopted the bill by a majority of 109 votes in favor and 82 votes against (with five abstentions).⁷⁶ The Council of States adopted the bill by a majority of 29 votes in favor and 13 votes against (with two abstentions).⁷⁷

7.14 Referendum period

In accordance with Swiss institutional rules, the adoption of the revised Customs Tariff Act by Parliament triggered a 100-day referendum period. During this

⁷³ See https://www.parlament.ch/poly/Abstimmung/51/out/vote_51_23496.pdf.

⁷⁴ See https://www.parlament.ch/poly/Abstimmung/51/out/vote_51_23496.pdf.

⁷⁵ See https://www.parlament.ch/poly/Abstimmung/51/out/vote_51_23497.pdf.

⁷⁶ See https://www.parlament.ch/poly/Abstimmung/51/out/vote_51_23856.pdf.

⁷⁷ See https://www.parlament.ch/poly/AbstimmungSR/51/out/Abstimmung_51_4709.pdf.

period, opponents of the measure could have called for a referendum. Although the Social Democratic Party (SP) publicly announced in a media release on 15 September 2021 that it would consider calling a referendum (SP, 2021), the 100-day referendum period expired without being used on 20 January 2022. The proposal had finally gone through the entire political process and had been adopted. It was now up to the Federal Council to decide on its entry into force and for the administration to work towards its implementation (see Section 9).

7.15 Review of the political process

As the account in this chapter shows, the political process to approve the measure was long and tortuous: after the project was almost dead following the EATC-S meeting on 21 August 2020, the plenary of the Council of States gave the project a new chance on 23 September 2020. However, given the strong opposition and the controversial debates in the National Council and its committee, the EATC-N, the success of the reform was far from guaranteed. The arguments exchanged during the debate, the close votes, the alternative proposals and the procedural delays confirm the findings of the political economy literature that unilateral trade liberalization is difficult to achieve in a purely domestic context.

A more detailed analysis of the votes, comparing the negative vote in the National Council Plenary on 4 June 2020 with the positive vote on 15 September 2021, shows that a shift in preferences of two parties in particular ultimately led to the adoption of the reform (see Table 3). While the parties on the left (the Socialdemocratic Party and the Green Party) had consistently opposed the project throughout the parliamentary process, both the Liberals and the Green-Liberals had (mostly) supported it. In contrast to these four parties, the Swiss People's Party and the Centre Party were split in the first vote, with roughly equal numbers of deputies from each group supporting and opposing the project. This changed in the second vote: the Swiss People's Party deputies now mostly joined the camp of supporters, while several Centre Group deputies who had voted against the measure in the first vote now either abstained or supported the project in the second vote.

Group	In Favour	Against	Abstentions
Socialists	0	38	0
Green-Liberals	16	0	0
Swiss Peoples' Party	29	26	0
Liberals	23	0	3
Center	15	14	1
Green Party	0	30	0
Total	83	108	4
Group	In Favour	Against	Abstentions
Socialists	0	39	0
Green-Liberals	16	0	0
Swiss Peoples' Party	50	1	2
Liberals	29	0	0
Center	11	6	13
Green Party	0	29	0
Total	106	75	15

Table 3:	National Council votes on 4 June 2020 (top) and 15 September
	2021 (bottom)

8 The international reception to the project

Although the decision to abolish industrial tariffs was taken autonomously, it naturally has international repercussions and is of interest to Switzerland's trading partners. Accordingly, Switzerland has informed its trading partners and international organizations on the project.

During the 2022 Trade Policy Review (TPR) of Switzerland and Liechtenstein at the WTO, Switzerland informed WTO members in its government report about the forthcoming abolition of tariffs on industrial goods.⁷⁸ The WTO Secretariat also briefly mentioned the issue in its report.⁷⁹ It was also mentioned in the opening statements during the TPR meetings on 18 and 20 May 2022.⁸⁰ During the

⁷⁸ See WTO (2022), Section 1.4.1, No. 1.58 on page 13.

⁷⁹ See WTO (2022a), Section 3.1.3.1, No. 3.20 on page 59.

⁸⁰ See WTO (2022b), No. 2.15 (p. 5; opening statement by Switzerland).

discussion, several WTO members commended Switzerland for this measure.⁸¹ Other members took note of the policy change without passing judgment,⁸² or had questions about its implications, for example with regard to future FTA negotiations.⁸³ Some members questioned the limitation of liberalization to industrial products.⁸⁴ In addition, several written questions were submitted by members on the project. These questions also focused on the possible impact of the measures on future FTA negotiations, the erosion of preferences for existing FTA partners, the exclusion of agricultural products from the liberalization project and whether bound tariffs would also be eliminated.⁸⁵

In response to these questions, Switzerland informed members, inter alia, that no general reduction of tariffs on agricultural products was foreseen and that WTO bound tariffs (according to Switzerland's consolidated tariff schedules) would remain unchanged. Switzerland confirmed that its applied MFN tariffs on industrial goods would be set to zero for all imports from third countries and that no changes were foreseen in its FTAs as a result of the move. Switzerland added that its obligations under FTAs for duty-free treatment of industrial goods would remain relevant in order to ensure legal certainty for the users of these FTAs.

In addition to the WTO, other multilateral organizations have also taken note of the project. The OECD briefly mentioned the project in its Economic Survey 2022 for Switzerland.⁸⁶ The IMF also made a brief (and neutral) mention of the project in its latest Article IV Consultation Report.⁸⁷ The unilateral abolition of industrial tariffs was also a topic of discussion in bilateral fora such as the Joint Committee of the FTA between Switzerland and the European Union (SECO, 2023).

⁸¹ See WTO (2022b): Statements by Hong Kong, China (No. 4.44, p. 18), Canada (No. 4.52, p. 19), Israel (No. 4.109, p. 24), Thailand (No. 4.127, p. 26), China (No. 4.135, p. 27), Moldova (No. 4.336, p. 45), Sri Lanka (No. 4.434, p. 55), the Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu (No. 4.391, p. 51); statements by the Discussant (No. 5.30, p. 67) and by the Chairperson (No. 6.5, p. 73).

⁸² See WTO (2022b): Statements by the European Union (No. 4.146, p. 28) and Uruguay (No. 4.307, p. 43).

⁸³ See WTO (2022b): Statement by the United States (No. 4.71, p. 22).

⁸⁴ See WTO (2022b): Statements by New Zealand (No. 4.213, p. 34) and Paraguay (No. 4.459, p. 57).

⁸⁵ See WTO (2022c): These include question No. 4 by the United States on the impact on FTA negotiations (p. 23); questions No. 1 and 2 by Israel on the rationale for the measures and whether there is an intention to liberalize agricultural trade as well (p. 40); questions No. 1 and 2 by Australia on why agricultural products have been excluded (p. 41); question No. 7 by Thailand on whether bound rates would also be eliminated (p. 47); questions No. 53, 54 and 55 (p. 98) by the Philippines on coverage, compliance requirements and any changes to customs clearance requirements; question No. 25 by Argentina (p. 109) on whether tariffs will be eliminated in one step or whether there will be a phase-in; questions No. 1 and 7 by New Zealand (pp. 110 and 112) on whether a similar measure has been considered for agricultural products; question No. 5 by the United Kingdom (p.132) on the implications for future FTA negotiations; question No. 1, 2 and 4 by Ukraine (pp. 152f) on remaining trade barriers after the abolition of industrial tariffs and plans to deepen preferential trade relations under existing FTAs; question No. 9 and 10 by Ecuador (p. 166) on whether tariff elimination is also planned for agricultural products; and question No. 9 and 10 by Ecuador (p. 166) on whether reiroin in trade with such partners.

⁸⁶ See OECD (2022), p. 39 and table on p. 41.

⁸⁷ See IMF (2023), p. 11; No. 38, p. 19, and No. 53 (p. 22).

Beyond international governmental organizations, business organizations have also taken note of the reform. The regional chamber of industry and commerce in neighboring southern Germany, for example, described the abolition of customs duties as "almost revolutionary" and praised the simplification of the customs tariff code as an important contribution to administrative simplification. It recommended that the European Union also consider both measures, arguing that the EU customs tariff was complex and inconsistent (INDUSTRIE- UND HANDELSKAMMER HOCHRHEIN-BODENSEE, undated).

9 Implementation

9.1 Decision on the date of entry into force

The law provided that the date of entry into force would be decided by the Federal Council. Accordingly, on 2 February 2022 – two weeks after the referendum period had lapsed – the Federal Council decided to bring the abolition of industrial tariffs into force on 1 January 2024.⁸⁸ On that date, import duties on all industrial products will be abolished. At the same date, the customs tariff for industrial products will be simplified. This date has been chosen in order to minimize the transition costs for economic operators and the administration and to give all players sufficient time to make the necessary technical and organizational adjustments.

However, in September 2022, press reports claimed that the Federal Council was considering postponing the entry into force to a later date in view of the deterioration of the Swiss central government's finances (BINER and SCHÄFER, 2022), which had been adversely affected by the COVID-19 crisis. A little later, on 19 October 2022, a Federal Council report⁸⁹ also mentioned the possibility of postponing the entry into force as an option for balancing the budget and respecting the constitutional budget rules.⁹⁰

The emerging discussion about a possible postponement of the date of entry into force created uncertainty among the business community, which had prepared for a timely implementation, as well as among politicians. On 18 October 2022, Economiesuisse, an umbrella organization of Swiss business associations and companies, spoke out against such a delay (ECONOMIESUISSE, 2022). Other business

⁸⁸ See BUNDESRAT (2022).

⁸⁹ See BUNDESRAT (2022a), p. 11, Table 7.

⁹⁰ Switzerland has a fiscal rule called the "debt brake" (in German: *Schuldenbremse*). It is enshrined in Art 126 of the Federal Constitution and is designed to avert (chronic) structural imbalances in federal finances. It links the annual ceiling for ordinary expenditure to the level of ordinary revenue (see https://www.efv.admin.ch/efv/en/ home/themen/finanzpolitik_grundlagen/schuldenbremse.html).

associations were also reported to be concerned about a delayed implementation (SCHÖCHLI, 2022). On 7 November 2022, the EATC-S stated in a media release that it had noted with concern that the Federal Council was considering postponing the abolition of industrial tariffs. Referring to the preparatory work underway in companies, the EATC-S stated that a postponement would not only be contrary to legal certainty but would also deprive the economy of an important relief measure decided by Parliament. The EATC-S announced that it would therefore continue to lobby the Federal Council to stick to its decision of February 2022 (WAK-S, 2022).

On 25 January 2023, the Federal Council confirmed that the abolition of industrial tariffs would come into force on 1 January 2024 (BUNDESRAT, 2023), thus ending any speculation about a later date.

9.2 Adaptation of ordinances and databases

The timely implementation of the reform project on 1 January 2024 requires a number of administrative adjustments:

- Annex 1 of the Customs Tariff Act the General Tariff must be updated by a Federal Council ordinance. This ordinance contains these changes and sets the applied tariffs to zero for all tariff numbers affected by the reform.⁹¹ It was adopted on 15 February 2023 and will enter into force on 1 January 2024. The ordinance also repeals or amends certain other ordinances.⁹²
- In addition, the Swiss working tariff *Tares*⁹³ will be adapted in time for 1 January 2024.

^{91 &}quot;Verordnung über die Änderung des Zolltarifs in den Anhängen 1 und 2 zum Zolltarifgesetz und über die Anpassung von Erlassen im Zusammenhang mit dieser Änderung" (https://www.bazg.admin.ch/dam/bazg/ de/dokumente/verfahren-betrieb/grundlagen-und-wirtschaftsmassnahmen/zolltarif/tares/Verordnung%20 %C3%BCber%20die%20%C3%84nderung%20des%20Zolltarifs%20vom%2015.%20Februar%202023%20 (IZA).pdf.download.pdf/verordnung%C3%BCberdie%C3%A4nderungdeszolltarifs.pdf).

⁹² The following instruments will be repealed: Ordinance of 17 February 1982 on the duty-free import of fabrics produced on hand looms (SR 632.115.01) and Ordinance of 3 December 1984 on the implementation of the GATT Agreement on Trade in Civil Aircraft (SR 632.231). The following instruments will be modified: Ordinance of 3 December 2021 on due diligence and transparency with regard to minerals and metals from conflict areas and child labor (SR 221.433); the Ordinance on the compulsory storage of fertilisers of 10 May 2017 (SR 531.215.25); the Tare Ordinance of 4 November 1987 (SR 632.13); the Free Trade Ordinance of 2 of 27 June 1995 (SR 632.319); The Free Trade Ordinance 1 of 18 June 2008 (SR 632.41.0); the Ordinance on tariff preferences of 16 March 2007 (SR 632.911); the Ordinance of 12 November 1997 on the incentive tax on volatile organic compounds (SR 814.018); the Ordinance on rules of origin of 30 March 2011 (SR 946.39); and the Value Added Tax Ordinance of 27 November 2009 (SR 641.201).

⁹³ Tares can be accessed via https://xtares.admin.ch/tares.

• The changes must also be implemented in the databases of the Federal Office for Customs and Border Security (FOCBS).

9.3 Information and outreach activities

The implementation of the project and its many technical implications naturally raise questions in the business community, which is involved in the day-to-day business of international trade. In order to meet their information needs, SECO and the FOCBS have undertaken various information and outreach activities. The FOCBS has restructured the Tares website. It is continuously adding new and updated information as well as downloadable datasets on technical aspects such as tariff simplification, concordance lists of tariff numbers, combined tariff and key structure, tariff structure and tariff numbers, key structures, statistical keys and customs facilitation.⁹⁴

In terms of outreach, SECO and the FOCBS published on the reform and participated in a number of seminars organized by business associations to help companies with the transition. In addition, SECO and FOCBS organized online information events for interested economic operators. By mid-November 2023, more than 1,700 representatives of Swiss and foreign companies and associations had taken part in these events. In addition, SECO has created a website with general information and frequently asked questions on the elimination of industrial tariffs.⁹⁵

9.4 Preparations towards a monitoring of price effects

One of the issues discussed since the public consultation is the extent to which cost advantages resulting from the abolition of industrial tariffs would be passed on to consumers. In view of this, the Federal Council has decided to carry out a monitoring exercise.

The pass-through of cost savings to consumers depends on several exogenous factors, such as market structure, inflation, economic developments and exchange rate movements. The more competition there is, the more likely it is that cost savings will be passed on to consumers. A related factor is the elasticity of demand,

⁹⁴ These documents are available on a special FOCBS website at https://www.bazg.admin.ch/bazg/de/home/services/ services-firmen/services-firmen_einfuhr-ausfuhr-durchfuhr/zolltarif-tares/aufhebung-der-industriezoelle.html; see also BAZG (2023; 2023a; 2023b).

⁹⁵ See https://www.seco.admin.ch/seco/de/home/Aussenwirtschaftspolitik_Wirtschaftliche_Zusammenarbeit/ Wirtschaftsbeziehungen/warenhandel/aufhebung_industriezoelle.html. For a brief presentation of the reform in German and French, see ZIMMERMANN (2023).

i.e, how sensitive consumers are to price changes. The higher the elasticity, the more companies have to pass on cost savings to avoid losing market share. Another exogenous factor is an increase in VAT from 7.7% to 8.1% (or from 2.5% to 2.6% and from 3.7% to 3.8% for reduced rates) on 1 January 2024, which is unrelated to the abolition of industrial tariffs. This VAT increase will lead to an increase in consumer prices if it is passed on to consumers. These opposing effects will make it difficult to measure the causal effects of price developments.

A feasibility study examining the best possible methodology for implementing such a monitoring was published in August 2023 (MEYER et al., 2023). Given the methodological challenges, a mix of methods has been proposed, including mainly a cross-country difference-in-differences approach combined with a comparison of price developments in reference countries and complementary methods such as business surveys, case studies and price data analyses. It is proposed to start the project when tariff abolition comes into force. A final report is expected by the end of 2025. Ideally, this monitoring will provide new insights into the functioning of competition in Switzerland.

9.5 Related actions and simplifications

The abolition of industrial tariffs will require a number of legal changes, but will ultimately lead to net deregulation. This will also allow the federal administration to abandon some tasks:

Abolition of temporary tariff suspensions in the textile sector: The Swiss textile industry, which is now a highly specialized industrial sector, relies heavily on imported inputs for production. At the same time, Swiss tariffs in the textile sector have historically been much higher than in other sectors (a situation shared with many other countries) as a result of past demands for protection. The benefits of tariff protection have long since been reversed and have become a burden for the sector. At the request of the Swiss textile industry, a temporary reduction of tariffs on textiles was introduced for the first time in 2015 and lasted until 2019.⁹⁶ In 2019, at the request of the industry, the Federal Council renewed and expanded this temporary measure until 31 December 2023.⁹⁷ With the imminent abolition of all industrial tariffs, these temporary suspensions and their extensions, as well as the associated administrative costs will now become obsolete. At the same time,

⁹⁶ Source: AS 2015 4935.

⁹⁷ Source: AS 2019 1611; SR 632.102.1. It covered 522 tariff lines (at the HS 8-digit tariff line level) in Chapters 50, 51, 52, 53, 54, 55, 56, 58, 59, and 60, of which 15 tariff lines could not benefit from the suspension program if these items were used for retail sale or were in ready-to-use form; see also BUNDESRAT (2019a).

the preferential treatment of a single industrial sector will be abolished. Finally, the indefinite elimination of tariffs will reduce uncertainty for the sector.

- Abolition of customs facilities: In the Swiss customs system, certain goods are eligible for a reduced rate of duty if they are intended for specific uses. In the past, certain industrial products were also eligible for such use-related duty relief.⁹⁸ If importers wished to benefit from such duty relief, they had to submit a request to the FOCBS. As of 1 January 2024, all 779 existing use-related duty relief facilities for goods in HS chapters 25-97 will be abolished, which will also reduce the administrative burden for both companies and the FOCBS.
- Abolition of the Expert Commission for Customs Tariff Matters: The Expert Commission for Customs Tariff Matters (*Fachkommission für Zolltariffragen*, or FfZ) is an advisory body in the legal form of an extraparliamentary commission. According to the information available, it was created in 1839, i.e., before the creation of the modern Swiss federal state, which underlines the traditional importance of customs matters in Switzerland.⁹⁹ It is consulted in specific situations regulated by law.¹⁰⁰ In the last ten years, only five matters have been referred to the FfZ; three of these five concerned proposals for the temporary abolition of customs duties on textile inputs and intermediates – a type of business that will disappear with the abolition of industrial tariffs on 1 January 2024 (see first bullet point in this section). The Federal Council has therefore decided to abolish the FfZ by 31 December 2023. Its few remaining tasks will be transferred

⁹⁸ The legal basis for this practice is the Verordnung des EFD vom 4. April 2007 über Zollerleichterungen für Waren je nach Verwendungszweck (Zollerleichterungsverordnung, ZEV), SR 631.012 (https://www.fedlex.admin.ch/eli/ cc/2007/252/de). Here is a concrete example to illustrate this: Before 1 January 2024, the duty rate for hygienic or chirurgical masks (HS no. 6307.9010) was CHF 130.00 per 100 kg. If the same products were used for the prevention of a pandemic, importers could ask for the application of a lower duty of CHF 40.00.

⁹⁹ The legal basis of the FfZ, formerly known as [Eidgenössische] Zollexpertenkommission is Art. 14 of the Customs Tariff Act, SR 632.10. Its members are appointed by the Federal Council, and the Commission is administered by SECO (see https://www.admin.ch/ch/d/cf/ko/gremium_10506.html). It is currently presided by the author of this article. According to research obtained from the Swiss Federal Archives, the first reference to a *Expertenkommission in Zollsachen* is found in the memoranda (*Abschiede*) of the Swiss Federal Diet (*Tagsatzung*). The archive reference is D0#1000/3#139-1* *Abschiede der eidgenössischen Tagsatzung des Jahres* 1839 [Deutsch; *Maschinenschrift*], 1839, p. 260, lit c (https://www.recherche.bar.admin.ch/recherche/#/de/ archiv/32699272). The Federal Diet was a meeting of delegates from the individual cantons that existed prior to the creation of the modern Swiss Confederation in 1848.

¹⁰⁰ These situations include (i) duty reductions, the temporary total or partial suspension of customs duties on certain goods or the setting of tariff quotas (under Art. 4 para. 3 of the Customs Tariff Act; SR 632.10); (ii) measures relating to tariff preferences for developing countries (under Art. 4, para. 1 of the Federal Law on the Granting of Tariff Preferences in Favour of Developing Countries (SR 632.91); and (iii) specific instances in the determination of tariffs on agricultural products (in accordance with the Federal Law on the Import of Goods Made from Agricultural Products; SR 632.111.72).

to the Commission for Economic $Policy^{101}$ – another extra-parliamentary commission under the aegis of SECO. The costs of maintaining the FfZ will thus become obsolete.

10 Conclusions

Switzerland's unilateral abolition of industrial tariffs on an *erga omnes* basis is one of the most important economic policy reforms in Switzerland in recent years. It sends a strong signal in favor of open trade at a time when trade is increasingly perceived as a zero-sum game, when the multilateral trading system is facing several challenges, when FTAs are becoming harder to conclude and when liberal trade policies are generally giving way to multifaceted protectionism.

As the reform will be implemented on 1 January 2024, it is of course far too early to make a final assessment – particularly as its economic impact will only be felt in the future. However, a number of lessons can already be drawn from the period between the launch of the project and its imminent implementation.

Starting with the political economy perspective, the tortuous path to political approval of the reform confirms the difficulties associated with unilateral liberalization in a domestic political context. These have long been discussed in the literature on the political economy of international trade (see Section 2) and are also manifest in the present case. This literature generally assumes that widespread but relatively small per capita gains provide insufficient incentives to lobby for trade liberalization. In line with these predictions, support for the project from consumer interests was indeed weak throughout the project. Against this background, it is not surprising that proposals emerged during the parliamentary debate to limit unilateral tariff abolition to raw materials and semifinished goods as a first step, thus excluding consumer goods from liberalization. Conversely, most domestic support for the project came from associations representing the interests of transforming industries with highly integrated value chains. This reflects the fact that the national and international competitiveness of these industries depends crucially on sourcing flexibility. It is worth noting that the same groups that supported the unilateral dismantling of industrial tariffs are also those that generally support the conclusion of FTAs. Their support for the unilateral abolition of tariffs shows that, at least in the Swiss case, there is not necessarily a contradiction between autonomous liberalization and the conclusion of FTAs.

¹⁰¹ In German: Kommission für Wirtschaftspolitik. The legal basis for the Commission is the Ordinance on the Commission for Economic Policy, SR 172.327.9; see also https://www.admin.ch/ch/d/cf/ko/gremium_10564. html.

The political debates and arguments have also shown that the logic of reciprocity and policymakers' preference for reciprocal liberalization are deeply rooted. They represent a difficult hurdle for unilateral liberalization projects. This is true even in the "Swiss case", where the pipeline of economically meaningful and politically realistic new FTA negotiations is beginning to dry up, and where most industrial tariffs are already being levied on imports from FTA partners. In such a situation, it is far from clear that the concrete costs to the Swiss economy of maintaining import tariffs would be justified by the discounted, potential benefits of such hypothetical future FTAs.

Another finding is that the domestic policy debate was largely driven by interests. Idealistic or fundamental considerations, such as the desire to remove distortions or discriminations, to increase economic agents' freedom of transaction or to increase economic freedom in general, did not play a decisive role in the debate.

Turning to more economic considerations, it is interesting to consider the contribution of this reform to Switzerland's import liberalization, also in comparison with other trade policy instruments. Looking at the tariff savings realized on imports into Switzerland in 2021 under all FTAs, these amount to CHF 2.416 million, with the FTA between Switzerland and the EU of 1972 alone accounting for the lion's share of 85% (CHF 2,057 million). All the other 34 Swiss FTAs negotiated over the past decades have resulted in a total of CHF 358 million in tariff savings on Swiss imports. By comparison, the immediate gross tariff savings resulting from the one-off unilateral elimination of industrial tariffs on Swiss imports (CHF 681.7 million based on 2022 figures) will be almost twice as high. In addition, unlike the tariff savings resulting from FTAs, the tariff savings resulting from this unilateral liberalization can be achieved without lengthy and costly international negotiations, but rather in a purely domestic political context. Moreover, economic operators benefit from these tariff savings without the cost of complying with rules of origin and the resulting distortions in sourcing decisions associated with preferential liberalization. More generally, as argued in Section 2.1, unilateral liberalization on an *erga omnes* basis comes without the welfare-diminishing trade diversion that results from FTAs or CUs. It therefore also contributes to the much-discussed diversification of supply sources and economic resilience.

Of course, when comparing FTAs with unilateral liberalization, it would not be fair to limit the analysis to the import liberalization element of FTAs; their main objective is to reduce (often high) foreign tariffs on a country's exports, which no unilateral measure can achieve.¹⁰² Moreover, modern FTAs not only liberalize tariffs, but also increase legal certainty in other areas such as non-tariff barriers, trade in services, investment or intellectual property. Finally, FTAs create international obligations that make it difficult to reverse liberalization once it has been achieved. Unilateral tariff elimination does not provide such insurance as long as bound tariffs remain in place (which is the case with the Swiss reform, thus maintaining an incentive for trading partners to establish or maintain free trade relations with Switzerland). Finally, as mentioned above, reciprocity-based FTAs may often be the only feasible way to liberalize a country's own imports from a domestic policy perspective.

In summary, it makes sense to consider unilateral liberalization as a complementary instrument to the conclusion of FTAs, each of which has its strengths and weaknesses. This is at least the case for a country with the characteristics of Switzerland: (i) a relatively small domestic market and thus limited weight in reciprocity-based negotiations; (ii) domestic industries with internationally highly integrated value chains and a strong interest in sourcing flexibility; (iii) low initial tariffs, which minimize the politically problematic distributional effects of liberalization; (iv) as a result, sufficient net domestic political support for unilateral liberalization; (v) a dwindling pipeline of economically meaningful and politically realistic FTA projects; (vi) flexible exchange rates and a flexible labor market; and (vii) a limited role for tariff revenues in the government budget.

For Switzerland, the relief that the project will bring to the economy comes at the right time. We are living in a time when the economy is under increasing pressure from a number of developments. These include rising geopolitical tensions which increase the risks of doing business internationally. These tensions are translating into a variety of initiatives aimed at increasing economic security through measures such as sanctions, tighter export or investment controls (increasingly including outbound foreign direct investment, too) and also industrial policy. Depending on their design, these initiatives will entail costs for businesses and taxpayers, as well as potential new forms of discrimination, distortions of competition and economic fragmentation at the global level.¹⁰³ Beyond security-related measures, we are witnessing a rapidly increasing regulatory burden, especially in Europe: New requirements for corporate due diligence, sustainability reporting, measures against deforestation or the introduction of a CBAM by the EU are just a few examples. Several of these initiatives include third country provisions, extending

¹⁰² It is not possible to quantify the total tariff savings on Swiss exports due to FTAs, as not all FTA partners share such data. Where data is available, it is included in the FTA Monitor of SECO at https://www.seco.admin.ch/ftamonitor.

¹⁰³ For an overview of recent international trends, see GLOBAL TRADE ALERT (2023). As this report shows, trade distortions by G20 countries outnumber trade reforms by about 3:1 (p. 7).

the reach of these regulations extraterritorially and ultimately raising competitors' costs. These new regulations will inevitably lead to the creation of new "vested interests" that will make such policies difficult to dismantle at a later stage. To sum up: international economic freedom has probably never been under so much pressure in recent decades as it is today.

In the face of these developments, the unilateral abolition of industrial tariffs by Switzerland is a rare example of a reform that actually provides some relief to the economy without any strings attached. And unlike the industrial policies pursued elsewhere, this relief has the advantage that it does not create new discriminatory trade distortions or government tasks, but removes existing ones.

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