

Spoerer, Mark; Streb, Jochen

Working Paper

Guns and butter - but no margarine: The impact of Nazi economic policies on German food consumption, 1933-38

FZID Discussion Paper, No. 23-2010

Provided in Cooperation with:

University of Hohenheim, Center for Research on Innovation and Services (FZID)

Suggested Citation: Spoerer, Mark; Streb, Jochen (2010) : Guns and butter - but no margarine: The impact of Nazi economic policies on German food consumption, 1933-38, FZID Discussion Paper, No. 23-2010, Universität Hohenheim, Forschungszentrum Innovation und Dienstleistung (FZID), Stuttgart,
<https://nbn-resolving.de/urn:nbn:de:bsz:100-opus-5310>

This Version is available at:

<https://hdl.handle.net/10419/44969>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

FZID Discussion Papers

CC Economics

Discussion Paper 23-2010

**GUNS AND BUTTER – BUT NO MARGARINE:
THE IMPACT OF NAZI ECONOMIC POLICIES
ON GERMAN FOOD CONSUMPTION, 1933-38**

Mark Spoerer and Jochen Streb

Discussion Paper 23-2010

**Guns and Butter – But No Margarine:
The Impact of Nazi Economic Policies on
German Food Consumption, 1933-38**

Mark Spoerer and Jochen Streb

Download this Discussion Paper from our homepage:

<https://fzid.uni-hohenheim.de/71978.html>

ISSN 1867-934X (Printausgabe)
ISSN 1868-0720 (Internetausgabe)

Die FZID Discussion Papers dienen der schnellen Verbreitung von Forschungsarbeiten des FZID. Die Beiträge liegen in alleiniger Verantwortung der Autoren und stellen nicht notwendigerweise die Meinung des FZID dar.

FZID Discussion Papers are intended to make results of FZID research available to the public in order to encourage scientific discussion and suggestions for revisions. The authors are solely responsible for the contents which do not necessarily represent the opinion of the FZID.

Guns and Butter – But No Margarine: The Impact of Nazi Economic Policies on German Food Consumption, 1933-38

Mark Spoerer

Institut historique allemand, Paris *

and

Jochen Streb

University of Hohenheim, Stuttgart *

This version: December 20, 2010

Abstract

The German population's material standard of living during the 'peace years' of the Nazi regime (1933-38) is much debated. We use hitherto disregarded consumption data and the axiom of revealed preferences to test whether the material standard of living improved. We find that the food consumption bundle realized in 1935-36 must have been inferior to that of 1927-28 although GDP per capita was much higher. Even in 1937-38 consumers were probably worse off compared to 1927-28. We conclude that increasing consumption constraints forced German consumers to a diet and thus to a material standard of living that were much more frugal than national income figures suggest.

JEL classification: N34, D12, P46

* Institut historique allemand, Hôtel Duret-de-Chevry, 8 rue du Parc-Royal, 75003 Paris, France. Tel. +33.1.44.54.51.65, fax +33.1.42.71.56.43, e-mail: mspoerer@dhi-paris.fr.

* University of Hohenheim (570A), Dept. of Economics and Social Sciences, 70593 Stuttgart, Germany. Tel. +49.711.459.23618, fax +49.711.459.23803, e-mail: j-streb@uni-hohenheim.de.

1. Introduction

In the second half of the 1930s Germany experienced high economic growth rates and a rapid decline of unemployment that were unparalleled in Europe. Contemporary observers, both inside and outside Germany, believed to witness a *Wirtschaftswunder* (economic miracle).¹ Even after the defeat of the Nazi regime, Germany's economic policy received attention. At a time when Keynesian ideas began to dominate the thinking of economic policy makers the apparent success of the Nazis' interventionist policies between 1933 and 1939 was seen as a case study which might serve as a possible toolbox for democratic planners as well and was thus worth to be analyzed thoroughly.²

It became quickly clear that the Nazi economic policy had, if at all, few to offer to democratic policy makers. Yet the assessment of its success has remained controversial. Some scholars followed the sceptical judgment of the Swiss economist René Erbe who showed that the economic upturn was accompanied by a reallocation of resources from consumer goods production to armaments production and was financed by enormous debts.³

This view, which is by and large shared by most economic historians of Nazi Germany today, has proved to be difficult to reconcile with the fact that a clear majority of the German population approved the new regime.⁴ One argument that has been repeated ever since and which even today contemporary witnesses seldom fail to mention is that the improved provision of material goods contributed to this positive assessment of a

¹ Cf. Hans E. Priester (1936), *Das deutsche Wirtschaftswunder*, Amsterdam: Querido; Wilhelm Prion (1938), *Das deutsche Finanzwunder. Geldbeschaffung für den deutschen Wirtschaftsaufschwung*, Berlin-Willmersdorf: Franke; Claude W. Guillebaud (1939), *The Economic Recovery of Germany from 1933 to the Incorporation of Austria in March 1938*, London: Macmillan.

² Cf., e.g., Guillebaud (1939), pp. 232f., 265; Otto Nathan and Milton Fried (1944), *The Nazi Economic System. Germany's Mobilization for War*, Durham: Duke University Press, pp. vi, 368; Samuel Lurié (1947), *Private Investment in a Controlled Economy. Germany, 1933-1939*, New York: Columbia University Press, p. vii. See also Wesley C. Haraldson and Edward F. Denison (1946), *The Gross National Product of Germany 1936-1944* (United States Strategic Bombing Survey, Overall Economic Effects Division, Special Paper 1), Washington, DC: mimeo; Burton Klein (1958), *Germany's Economic Preparations for War*, Cambridge, Mass.: Harvard University Press, p. v.

³ René Erbe (1958), *Die nationalsozialistische Wirtschaftspolitik im Lichte der modernen Theorie* (Basle Centre for Economic and Financial Research, B.2), Zurich: Polygraphischer Verlag. For a revisionist view concerning Germany's indebtedness, see Albrecht Ritschl (2002), Deficit Spending in the Nazi Recovery: A Critical Reassessment, *Journal of the Japanese and International Economy*, 16, pp. 559-582.

⁴ Cf. for quantitative evidence Karl-Heinz Reuband (2006), Das NS-Regime zwischen Akzeptanz und Ablehnung. Eine retrospektive Analyse von Bevölkerungseinstellungen im Dritten Reich auf der Basis von Umfragedaten, *Geschichte und Gesellschaft*, 32, pp. 315-343.

murderous regime. This contention found authoritative support by a study of the American economist Burton Klein who had served for the United States Strategic Bombing Survey under John K. Galbraith in the mid-1940s. In his analysis of the German rearmament program of the 1930s he concluded that

"in the prewar period, the German economy produced both 'butter' and 'guns' – much more of the former and much less of the latter than has been commonly assumed. By 1937, civilian consumption, investment in consumer goods industries, and government nonwar expenditures equalled or exceeded previous peak levels. [...] Until 1936, rearmament and increased civilian consumption could be achieved simultaneously by drawing on unemployed resources. Indeed, the rearmament deficits had a stimulating effect on consumption. There was no conflict, therefore, in having both more 'butter' and more 'guns'. In the years 1937 and 1938, however, the German economy was operating at near full employment, and a sizable increase in armament expenditures could have been achieved only at the expense of some decline in civilian consumption. [...] It appears, however, that the German government was unwilling to ask for such sacrifices."⁵

The findings of subsequent research on German agriculture were in line with this assessment. The main subject of this research was the *Reichsnährstand* (Reich Food Corporation) founded by the Nazis in 1933 which was in charge of regulating German agricultural production and distribution and which soon started a much propagated *Erzeugungsschlacht* (battle for production). Both John Farquharson and in particular Clifford R. Lovin argued that the Nazi agricultural policies were successful in augmenting food production and increasing national self-sufficiency.⁶

These findings were taken up eagerly by historians when it came to a reassessment of the Nazi period in the course of the 'modernisation' debate. At the core of the discussion was the question whether the Nazi regime was modern in the sense that it was in many respects not a deviation from larger 20th century trends. In this context, a number of German historians emphasised in the 1980s that the standard of living increased considerably in the course of the 1930s.⁷ In a leading text book on the period, the historian Hans-Ulrich

⁵ Klein (1958), pp. 76, 79.

⁶ Clifford R. Lovin (1969), *Agricultural Reorganization in the Third Reich: The Reich Food Corporation (Reichsnährstand)*, *Agricultural History*, 43, pp. 447-461; John E. Farquharson (1976), *The Plough and the Swastika: The NSDAP and Agriculture in Germany 1928-45*, London and Beverly Hills: Sage, pp. 176f.

⁷ Cf. Hans D. Schäfer (1981), *Das gespaltene Bewußtsein. Über deutsche Kultur und Lebenswirklichkeit 1933-1945*, Munich et al.: Hanser, pp. 116-119; Michael Prinz (1986), *Vom neuen Mittelstand zum Volksgenossen. Die Entwicklung des sozialen Status der Angestellten von der Weimarer Republik bis zum Ende der NS-Zeit*, Munich: Oldenbourg, pp. 187-196; idem (1994), *Die soziale Funktion moderner Elemente in der*

Thamer argues that among "the assets of the economic and social policies of the regime were the reduction of unemployment and the enhancement of the living standard".⁸

This positive assessment of Nazi agricultural and consumption policies has recently found support by Werner Abelshausen and, in particular, by Götz Aly. While Abelshausen is careful enough to note that "the German diet was remarkably modest", his provocative conclusion that the Nazis were "largely successful" in producing both "butter and guns" has evoked objections.⁹

Following Erbe, Christoph Buchheim has termed the Nazi economic upturn "distorted growth".¹⁰ The discussion between Abelshausen and Buchheim illustrates a crucial problem in assessing the performance of Nazi economic policies which shows up in other comparative work on this period as well. While Abelshausen compares the standard of living in the late 1930s with that of the trough of the crisis years, 1932 (as did the Nazi propaganda, official German statisticians and probably the common consumers of the 1930s as well), Buchheim's reference period is the late 1920s when Germany's economy experienced a short – though financed by massive foreign debt inflow – economic boom. Thus his assessment of the material living standard in the second half of the 1930s is much more critical than Abelshausen's.

Buchheim's stance is supported by the results of Jörg Baten and Andrea Wagner who have supplied evidence from social and medical data. Whereas the biological standard of living improved in Western European countries during the 1930s, it stagnated in Germany.¹¹ In addition, research on German agriculture has refuted the positive assessments of Lovin and Farquharson. By comparing agricultural output and input of the 1930s with that of the

Gesellschaftspolitik des Nationalsozialismus, in idem and Rainer Zitelmann (eds.), *Nationalsozialismus und Modernisierung*, 2nd edn., Darmstadt: Wissenschaftliche Buchgesellschaft, pp. 297-327, here pp. 316f.

⁸ Our translation from Hans-Ulrich Thamer (1998), *Verführung und Gewalt. Deutschland 1933-1945*, 3rd edn., Berlin: Siedler, p. 511 (first edition 1986).

⁹ Werner Abelshausen (1998), Germany: Guns, Butter, and Economic Miracles, in Mark Harrison (ed.), *The Economics of World War II. Six Great Powers in International Comparison*, Cambridge: Cambridge University Press, pp. 122-176, quotes pp. 147f.; idem (1999), *Kriegswirtschaft und Wirtschaftswunder. Deutschlands wirtschaftliche Mobilisierung für den Zweiten Weltkrieg und die Folgen für die Nachkriegszeit*, *Vierteljahrshefte für Zeitgeschichte*, 47, pp. 503-538, here p. 525.

¹⁰ Christoph Buchheim (2001), Die Wirtschaftsentwicklung im Dritten Reich – mehr Desaster als Wunder. Eine Erwiderung auf Werner Abelshausen, *Vierteljahrshefte für Zeitgeschichte*, 49, pp. 653-664; see also Mark Spoerer (2005), Demontage eines Mythos? Zu der Kontroverse über das nationalsozialistische "Wirtschaftswunder", *Geschichte und Gesellschaft*, 31, pp. 415-438. @Evtl. Buchheim (2010) einbauen?

¹¹ Jörg Baten and Andrea Wagner (2003), Autarchy, Market Disintegration, and Health: The Mortality and Nutritional Crisis in Nazi Germany, 1933-1937, *Economics and Human Biology*, 1, pp. 1-28.

first third of the 20th century, Gustavo Corni argued that the path of modernisation slowed down in the 1930s.¹² This result has been confirmed by a total factor productivity analysis by Stephanie Degler and Jochen Streb who found that the TFP growth of German agriculture grew significantly slower in the 1930s than in the 1920s or the 1950s.¹³

Yet the latest contribution to the debate on the welfare effects of the Nazi economic and consumption policies carries the revisionist view to extremes. In an influential book, the historian Götz Aly argues that the Nazi regime bribed ordinary Germans by redistributing the wealth taxed from the German rich and looted from the peoples in the occupied territories and from European Jewry. His main argument, the securing of political consent by redistribution, is expressed in the book's title, *Hitlers Volksstaat* (Hitler's people's state).¹⁴ While Aly's economic arguments were heavily criticised by Adam Tooze and Mark Spoerer,¹⁵ his success in the public debate – the book was widely discussed in the media and saw its fifth edition two months after initial publication – demonstrates the relevance of the issue.

In this paper, we systematise the findings of different lines of recent research on the consumption of consumer goods and add new evidence. While earlier research has focused on describing the policies that affected consumer goods production and consumption we assess the results. We will focus our analysis on food products as they were to a lesser extent affected by quality deterioration than other consumer goods. We investigate in how far the Nazis' policies affected actual food consumption by taking the late 1920s and the 1950s as benchmark periods. In these two democratic periods, though certainly not free of state intervention, food consumption was much less influenced by interventionist government policies than in the 1930s.

¹² Gustavo Corni (1990), *Hitler and the Peasants. Agrarian Policy in the Third Reich, 1930-1939*, New York et al.: Berg, p. 174.

¹³ Stephanie Degler and Jochen Streb (2007), Die verlorene Erzeugungsschlacht: die nationalsozialistische Landwirtschaft im Systemvergleich, *Jahrbuch für Wirtschaftsgeschichte*, no. 2, pp. 161-181. See also Jochen Streb and Wolfram Pyta (2005), Von der Bodenproduktivität zur Arbeitsproduktivität. Der agrarökonomische Paradigmenwechsel im Dritten Reich, *Zeitschrift für Agrargeschichte und Agrarsoziologie*, 53, pp. 56-78.

¹⁴ Götz Aly (2005), *Hitlers Volksstaat. Raub, Rassenkrieg und nationaler Sozialismus*, Frankfurt on Main: Fischer.

¹⁵ Adam Tooze, *Economics, Ideology and Cohesion in the Third Reich: A critique of Götz Aly's "Hitlers Volksstaat"* (http://www.hist.cam.ac.uk/academic_staff/further_details/tooze-aly.pdf); Review Spoerer on Aly in *H-Soz-Kult*, 26 May 2005 (<http://hsozkult.geschichte.hu-berlin.de/rezensionen/2005-2-143>); URLs checked 9 December 2010.

As a result, we find that in the 1930s food consumption was affected much stronger than hitherto thought. The diet German households consumed in the 1930s was much more frugal than the one consumed in the early 1950s, when GDP and disposable income were about the same but when production was less regulated and consumption largely unconstrained. These findings, which pertain to most elementary issues at a time when typical worker households still had to devote 45 per cent of their income to buying food, leave little room for interpreting the Nazi period as 'modern' or 'social'.

2. Nazi Policies Affecting Consumer Goods Consumption: An Overview

It is widely accepted now that the Nazis headed for war right after the takeover of power in January 1933. The prioritisation of armaments production was constrained by two qualifications which were intertwined with each other. Firstly, in the beginning of the Third Reich, the popularity of the regime was inseparably attached to its ability to reduce unemployment which, according to the still too conservative official numbers, attained more than 6 million persons (34 per cent of the labour force) in the winter of 1932-33.¹⁶ While this problem was overcome by 1936 when full employment was achieved, the second qualification proved to be persistent and of increasing importance the less unemployed were still on the dole. After several years of economic hardship, households wanted to have their consumption needs fulfilled. The regime's trade-off between vigorous rearmament and onerous consumer satisfaction led to a policy which has been termed by Abelshauser "as much butter as necessary, as many guns as possible".¹⁷

In this conflict between the consumption needs of private households on the one hand and those of the state on the other, an obvious measure was to encourage savings. The German state, however, was by far the largest debtor and thus was not willing to increase the interest rate. Hence the only means to increase household savings was moral suasion. Yet, it turned out that this was by far not sufficient to absorb the increasing purchasing power. Despite massive propaganda, the savings-income ratio remained remarkably low from 1933

¹⁶ Cf. Dan P. Silverman (1998), *Hitler's Economy. Nazi Work Creation Programs, 1933-1936*, Cambridge, Mass.: Harvard University Press, pp. 251, 253.

¹⁷ Abelshauser (1998), p. 131.

to 1937.¹⁸ As a consequence, the German authorities increasingly relied on interventionist measures that were intended to satisfy the level of consumer needs that was seen as sufficient for sustaining political power with as little resources as necessary.

Figures 1a and 1b illustrate these measures in a stylised way. The commodity in figure 1a is 'rationed' in the sense that the German authorities were not willing to have it supplied in the quantity at which consumers' willingness to pay equalled producers' willingness to supply. In contrast, a number of commodities can be termed 'recommended' (Figure 1b) in the sense that the authorities tried to have the households consume them rather than 'rationed' goods. Typical 'rationed' goods were foodstuffs that had to be imported, while 'recommended' goods could be produced with domestic resources that were of no strategic importance for the armaments production.

[Insert Figures 1a and 1b about here]

The curves in bold lines indicate the situation in early 1933 when, after three consecutive years of deflation, low prices (p^*) cleared the markets. In the subsequent years, employment increased which shifts the demand curve to the right (shift A in Figures 1a and 1b). Right from the beginning the government tried to persuade consumers to substitute 'recommended' goods like rye bread, potatoes, fish, apples, sugar, jam and rayon textiles for 'rationed' goods like white bread, meat, animal fat, tropical fruits or cotton textiles.¹⁹ In other words, these measures targeted consumer preferences (shift B). Less subtle government action incurred surplus costs for producers (shift C). E.g., a quite bizarre restriction was the enforced intermixture of (dear) butter into (cheap) margarine. This made margarine dearer and less attractive for less affluent consumers. It also affected the supply of butter, itself a rather scarce good, but it helped reducing the import demand of the margarine mills for sun flower oil thereby saving scarce foreign exchange. Another

¹⁸ While the average savings-income ratio for the period 1926-29 was 7.0 per cent, the annual figures for 1933-38 are 2.5, 5.0, 5.6, 4.2, 5.4 and 8.2, respectively. Savings (excluding those of foreigners) from Deutsche Bundesbank, *Geld- und Bankwesen in Zahlen 1876-1975*, Frankfurt on Main: Knapp 1976, p. 4, disposable income from Spoerer (2005), pp. 436-438. In the sources, income data for 1938 include Austria, savings data not. The figure for disposable income in 1938 has thus been transformed to pre-1938 territory by the net national income data in *Statistisches Jahrbuch für das Deutsche Reich* (1941-42), pp. 604f., which are given for both pre-1938 and 1938 territory.

¹⁹ Cf. Hartmut Berghoff (2001), Enticement and Deprivation: The Regulation of Consumption in Pre-War Nazi Germany, in Martin Daunton and Matthew Hilton (eds.), *The Politics of Consumption. Material Culture and Citizenship in Europe and America*, Oxford: Oxford University Press, pp. 165-184, here p. 173; idem (2003), "Times Change and We Change with Them": The German Advertising Industry in the Third Reich—Between Professional Self-Interest and Political Repression, *Business History*, 45, pp. 128-147.

grotesque example is the setup of a national whaling fleet that was to deliver the input for train oil, another substitute for sun flower oil.²⁰ Even more interventionist measures were direct restrictions on the purchase of input goods, on imports and even on plant investment. Most of these measures have already been described in the 1940s in the seminal works of Otto Nathan, Milton Fried and Samuel Lurié.²¹ A more detailed look on the textile industry has recently been provided by Gerd Höschle.²² These restrictions result in a kinked supply curve (shift D). In contrast, the supply of 'recommended goods' was fostered by subsidies (shift E). On the aggregate, restrictive policies outweighed supportive measures by far.

Had the regime stopped here, the combination of increased demand and curtailed supply on the markets for 'rationed' goods would inevitably have resulted in price increases. Indeed, the prices of many consumer products showed upward tendencies. Hence the Nazis tightened existing price control measures which had been introduced by preceding governments. The story of Nazi price policies is very complicated as a number of conflicting aims had to be reconciled. The most notable aims were, on the one hand, the political imperative to keep prices stable and, on the other hand, the ambition to increase farmers' incomes, which had suffered in the years of deflation. In a series of articles, André Steiner has traced the history of price controls in the 1930s.²³

The picture which emerges from these policies is quite clear. 'Rationed' good markets were characterised by controlled prices (p') below market clearing levels (p^0). Since prices were bereft their allocation function, queuing and black markets reduced the excess demand (e) and solved the allocation problem—the Nazis still shied away from officially

²⁰ Cf. Birgit Pelzer and Reinhold Reith (2001), *Margarine. Die Karriere der Kunstbutter*, Berlin: Wagenbach, pp. 88f.

²¹ Nathan and Fried (1944); Lurié (1947).

²² Gerd Höschle (2004), *Die deutsche Textilindustrie zwischen 1933 und 1939. Staatsinterventionismus und ökonomische Rationalität*, Stuttgart: Steiner.

²³ André Steiner (2006), Von der Preisüberwachung zur staatlichen Preisbildung. Verbraucherpreispolitik und ihre Konsequenzen für den Lebensstandard unter dem Nationalsozialismus in der Vorkriegszeit, in idem (ed.), *Preispolitik und Lebensstandard. Nationalsozialismus, DDR und Bundesrepublik im Vergleich*, Cologne et al.: Böhlau, pp. 23-85; idem (2006a), Der Brotpreis - ein politischer Preis unter den Bedingungen des NS-Regimes, in Johannes Bähr and Ralf Banken (eds.), *Wirtschaftssteuerung durch Recht im Nationalsozialismus. Studien zur Entwicklung des Wirtschaftsrechts im Interventionsstaat des "Dritten Reichs"*, Frankfurt on Main: Klostermann, pp. 365-420. For price policies in public procurement see Jochen Streb (2009), Negotiating Contract Types and Contract Clauses in the German Construction Industry during the Third Reich, *RAND Journal of Economics*, 40, pp. 364-379.

rationing consumer goods which was not introduced before late August 1939, a few days before the raid on Poland.

While the intense historical research of the past decades has succeeded in describing the policies that affected consumer goods production and consumption, the analysis of the actual effects on the standard of living has remained underdeveloped. A start has been made by a seminal paper on the biological standard of living by Jörg Baten and Andrea Wagner who find that several demographic indicators were quite unfavourable for Nazi Germany compared to their Western neighbours. Moreover, regional shortages of protein supply correlated with increases in infant mortality.²⁴ In line with these findings, we believe that the degree of failure of German consumption policies in Nazi Germany has been underestimated so far. We ask to what extent German households were forced to deviate from the consumption bundle they would have preferred in a less regulated economy.

3. The Impact of Nazi Policies on Food Consumption

To what extent did the Nazis' inability to modernise and increase agricultural production, the unwillingness to import foodstuffs, the imposition of supply constraints and political prices affect private food consumption? It should be emphasised that in German households of the interwar period food expenses still dominated all other expenditure issues.

[Insert Table 1 about here]

In general, we suppose that, when real GDP and disposable income per capita are increasing, households voluntarily substitute high-valued foodstuffs with relatively high income elasticity for basic food stuffs with relatively low income elasticity. Any analysis of consumption after 1933, however, is confronted with the problem that it was distorted by the government measures discussed in section two. The multitude of constraints imposed on the household's consumption behaviour must have led to numerous involuntary substitution effects. The problem is how to assess changes in the food consumption bundle in a world in which price signals do no longer convey valid information on how much households value the goods they consume.

²⁴ Cf. Baten and Wagner (2003).

To solve this problem we make use of a straightforward benchmark that gives us an idea about how consumption would have roughly developed in the absence of Nazi market regulation. Assuming both that the preferences of the German consumers were stable in the mid of the 20th century and that preferences in West Germany were not substantially different from those of the whole of Germany, the actual consumption pattern of Germany in the 1950s should mirror the hypothetical unconstrained consumption of the 1930s.

In Table 2 we compare the average per capita food consumption of the calendar years 1927-28 (=100) with that of 1937-38 and the average of the harvest years 1950-51 and 1951-52. The years 1927-28 and 1937-38 are chosen because they were the peak years of the business cycles in the Weimar Republic and the Third Reich, respectively. In 1951, disposable income of private households, which is the best indicator for their consumption potential, equalled the respective number of 1937-38 (per capita and in constant prices).²⁵ The decisive difference between the years 1937-38 and 1951 is that demand and supply of foodstuffs were subjected to substantial regulation in the late 1930s, but much less in the early 1950s. In 1951, when real disposable income per capita was 13 per cent higher than in 1927-28, German households substituted wheat flour for rye flour and potatoes, and fresh and tropical fruits for vegetables. They also substituted margarine for butter which reflects a preference for a cheap spread fat (the role of cholesterol was not yet known). Under the assumption of stable preferences, it is reasonable to expect that German households would have liked to consume a similar bundle of foodstuffs in the boom years of the Third Reich when real disposable income per capita was as high as in 1951. In Table 3 we have sorted the foodstuffs by the increase of their consumption between 1951 and 1927-28, the benchmark year (col. ii). The Table demonstrates that, despite the identical level of real disposable income per capita, the consumption pattern in 1937-38 considerably differed from the one in the Federal Republic (col. iii). Per capita consumption of typical inferior goods like rye flour products and potatoes was higher, while per capita consumption of

²⁵ In constant prices – which is not unproblematic as the cost of living index was of course influenced by the Nazi price policies. By comparing prices from household surveys that were actually paid with the official prices, however, Steiner has argued that the price differences were negligible in the food sector; cf. André Steiner (2005), *Zur Neuschätzung des Lebenshaltungskostenindex für die Vorkriegszeit des Nationalsozialismus*, *Jahrbuch für Wirtschaftsgeschichte*, no. 2, pp. 129-152.

wheat flour products, fresh fruits, tropical fruits, sugar, margarine, full-cream milk and vegetables was lower than after the Second World War.

[Insert Table 2 about here]

The demand patterns for certain products need a little more explanation. As the German margarine industry relied on imported primary products, the Nazi government severely constrained margarine production and subsidised butter production. In addition to the intermixture of butter into margarine, margarine producers were also forced to substitute skimmed milk for vegetable oils.²⁶ As margarine production was decreasing consumers were forced to buy the dearer butter. Another rather income-elastic product which was consumed in larger quantities in 1937-38 than in 1927-28 and 1951 is meat.²⁷

Yet, apart from these cases it is clear that rye bread and potatoes were a much more frugal diet than white bread, vegetables and fruits. Obviously, as a result of the regulation of the agricultural production, of the food processing industry and of foreign trade, German households were forced to spend their income mainly on foodstuffs they preferred less. If, however, the German consumers were forced to substitute rye products for wheat products, were they compensated by more meat and butter, and even better off in the end? An obvious further step of our analysis is to weight these countervailing effects.

From a large consumer survey carried through by the German statistical office we know the average quantities of the most important foodstuffs consumed by a typical worker household in 1927-28. As the statistical office also recorded the average prices for the most important foodstuffs, we are able to calculate the value of the average food consumption bundle in 1927-28, which is 863 RM per year.²⁸ After the trough of the economic crisis in the early 1930s, real disposable income per capita attained the level of 1927-28 again in 1935-36. If we value the actual food consumption bundle of 1935-36 in prices of 1927-28, we derive 859 RM. What is interesting here is not so much that the value of the 1935-36

²⁶ Cf. Pelzer and Reith (2001), pp. 76f.

²⁷ See for the consumption of meat in a long-term perspective Hans-Jürgen Teuteberg (1998), *Der Fleisch- und Wurstverzehr der Deutschen in historischer Betrachtung, Ernährungsforschung*, pp. 1-28. Probably meat consumption in the early 1950s was still restrained by the depletion of cattle stocks during the war.

²⁸ Compatible consumption and price data are available for the following foodstuffs, ordered in the rough amount of quantities consumed by a typical household: Potatoes, full-cream milk, rye flour products, wheat flour products, sugar, margarine, eggs, pork, butter, beef, rice, peas, veal and mutton. – As households consumed other food products as well, the amount of 863 RM underestimates the value of the full bundle actually consumed.

food consumption bundle was slightly below the budget constraint of 1927-28 but that the household could have been able to buy the bundle of 1935-36 already in 1927-28 yet obviously preferred another one: white bread rather than rye bread, beef rather than pork, fruits and vegetables rather than potatoes. In other words, the following Table 3 illustrates the effects of involuntary substitution.

[Insert Table 3 about here]

If we repeat the same procedure for the food consumption bundle of 1937-38, we derive a value of 884 RM in prices of 1927-28. The question whether or not the households preferred this slightly dearer consumption bundle of 1937-38 to the bundle of 1927-28 cannot be answered with the help of the theory of revealed preferences.²⁹ Figure 2 illustrates that both cases are possible. Note, however, that the fact that the bundle actually consumed in 1937-38 valued by prices of 1927-28 was 2.5 percent more expensive than the bundle of 1927-28 does not automatically imply that the former was preferred to the latter. Figure 2 demonstrates this graphically for a simplified world of just two commodities.

[Insert Figure 2 about here]

The consumption bundles of 1927-28 and 1935-36 are on the same budget line. From the theory of revealed preferences we can infer that the bundle of 1927-28 must have been preferred by the consumers of the late 1920s to that of 1935-36 as they could have afforded this latter bundle as well. Assuming constant preferences we can then conclude that the consumers of the year 1935-1936 would have preferred the bundle of 1927-28 as well. In order to assess the valuation of the bundle of 1937-38, which is situated at a slightly higher budget line, we would need detailed information about the preference ordering (which shape the indifference curve³⁰) but which are not available. Given the distortionary effects of the Nazi supply and demand policies in the 1930s we are tempted to assume that the bundle of 1937-38 was located below the indifference curve and therefore still inferior to that of 1927-28, but without knowledge of the preferences this remains speculation.

²⁹ For the theory of revealed preferences see Andreu Mas-Colell, Michael D. Whinston and Jerry R. Green (1995), *Microeconomic Theory*, Oxford: University Press, pp. 28-36.

³⁰ In microeconomic consumer theory, the indifference curve shows all consumption bundles that a household equally prefers. Below the indifference curve we find all consumption bundles a household prefers less than those bundles placed at the indifference curve.

A possible objection that we cannot test here is that the regime might have compensated consumers for their frugal diet with non-food products such as cloths or better housing. However, the complaints about the deteriorating quality of cloths were ubiquitous, and quality deterioration was also a problem in residential construction.³¹

We can conclude that, at the eve of World War II, the diet of German consumers was at most at the pre-crisis level of the late 1920s. Although American-style mass consumption was on the agenda of the regime,³² it failed to improve the standard of living compared to 1927-28.

4. Concluding Remarks

The evidence presented here supports the more pessimistic view of the standard of living under Nazi rule. In passing we note that the antithesis of "butter" vs. "guns" that has occupied the literature on the Nazi economic systems since at least the 1940s does not make much sense. "Butter" is not a suitable metaphor for the consumer demand of the 1930s as it was more of a 'recommended' product in the sense of Figure 1b than a 'rationed' product. Butter was a product that many households would have liked to replace with margarine, which they preferred, and thus is much more a metaphor for consumption enforced by the regime. The challenge was to supply more margarine, not more butter.

A more important issue is the question of approval of the regime. If, as we hope to have shown, the material standard of living was very modest and if, as Baten and Wagner argue, the biological standard of living fell behind that of Western Europe, why did most Germans approve the regime? Recent economic research on happiness and satisfaction might help. As Bruno Frey and Alois Stutzer point out, however, important variables that are conducive for happiness, apart from material affluence, are political, economic and personal freedom, direct political participation and decentralisation,³³ issues not very prominent in Nazi Germany.

And probably not among the German people. As shown in the introduction, it has always been debated among economic historians whether the peak of the 1920s upturn or the

³¹ Cf. Berghoff (2001), pp. 175, 180f.

³² Cf. Berghoff (2001).

³³ Bruno Frey and Alois Stutzer (2002), What Can Economists Learn from Happiness Research?, *Journal of Economic Literature*, 40, pp. 402-435; idem (2005), Happiness Research: State and Prospects, *Review of Social Economy*, 63, pp. 207-228.

traumatic experience of 1931-32 was the reference period for the contemporaries. Hartmut Berghoff has argued that 1932 served as reference period not only for the Nazi propaganda, but for most German households as well. According to Berghoff, another factor contributed to the approval of the regime, even among working class people. The Nazi propaganda was quite successful in delivering 'virtual consumption' which served as a substitute for real (and restrained) consumption.³⁴

In our understanding, 'virtual consumption' might be interpreted in two ways. On the one hand, the notion suggests that the Nazis were successful in having consumers defer (material) consumption to a future date, e.g. if they participated in the *Volkswagen* savings program which started in August 1938. At least the more affluent strata of the German society may have dreamt that these consumption promises would materialise in the future and were in the position to increase their propensity to save. This might be a reason (among others) why the savings-income ratio, which was remarkably low throughout the mid-1930s, increased in 1938.³⁵ For the lower class households, probably even for the median household, the *Volks*-products were illusionary.³⁶ Their budget was spent for food, rent and clothing and thus for product groups in which the national socialist regime had a remarkably modest record.

On the other hand, 'virtual consumption' may stand for an increase in the consumption of public goods which seemingly compensated many households for the mediocre consumption possibilities of private goods. To the list of non-economic variables that Frey and Stutzer find important for individual happiness one could add, at least for Germany in the 1930s, public goods like national pride (re-militarisation of the Rhineland and Olympic Games 1936), economic and (for unpolitical and 'aryan' citizens) political stability. In particular, economic stability may have played a very important role after the shocking experiences of the hyperinflation 1923 and the great slump of 1931 and 1932. The frustrating answer of why so many Germans supported the Nazi regime may simply be that German households were willing to trade utility from material consumption and human rights for lower socioeconomic risks and national pride.

³⁴ Berghoff (2001), p. 173; idem (2007), *Neue Kontroversen zur Konsumgeschichte des Nationalsozialismus, Geschichte in Wissenschaft und Unterricht*, 58, pp. 502-518, here pp. 509, 518.

³⁵ See fn. 18 below.

³⁶ Cf. Wolfgang König (2004), *Volkswagen, Volksempfänger, Volksgemeinschaft: "Volksprodukte" im Dritten Reich: Vom Scheitern einer nationalsozialistischen Konsumgesellschaft*, Paderborn: Schöningh, pp. 258-262.

Table 1 Expenditure Shares of Various Household Types, 1927-28

Household type, annual income	Food	Habitation	Clothing	Other
Blue collar				
< 2,500 RM	48	19	10	23
> 4,300 RM	42	17	5	36
White collar				
< 3,000 RM	42	22	11	25
> 6,100 RM	28	21	13	38
Civil servants				
< 3,000 RM	43	22	12	23
> 10,000 RM	22	24	12	42

Source: Statistisches Reichsamt (1932), *Die Lebenshaltung von 2000 Arbeiter-, Angestellten und Beamtenhaushaltungen. Erhebungen von Wirtschaftsrechnungen im Deutschen Reich von 1927/28*, vol. I, Berlin: Hobbing, pp. 20, 32, 43.

Table 2 Real Disposable Income per Capita and per Capita Food Consumption in Germany, 1927-28 = 100

Year	Third Reich Ø 1937-38 (i)	Federal Republic 1951 (ii)	(i) in per cent of (ii) (iii)
<i>Real income per capita</i>	112	113	99
Skimmed milk	308	195	158
Fresh fruits	98	145	68
Margarine	85	139	62
Tropical fruits	77	128	61
Sugar	104	114	91
Wheat flour products	90	108	84
Eggs	111	103	108
Potatoes	102	99	103
Total fat	96	97	99
Full-cream milk	92	97	95
Vegetables	93	93	99
Beef	107	77	138
Butter	122	76	161
Total meat	106	73	145
Pork	104	72	144
Rye flour products	105	65	161

Notes: 1927-28: Germany without Saarland; 1937-38: Germany with Saarland and without Austria; 1951: Federal Republic of Germany with Berlin (West) and without Saarland.

Sources:

Consumption: Dieter Grupe (1957), *Die Nahrungsmittelversorgung Deutschlands seit 1925. Eine Auswertung der einschlägigen Statistiken zu vergleichbaren Versorgungsbilanzen*, Hanover: Strothe, pp. II.88f.
Prices: *Statistisches Jahrbuch für das Deutsche Reich* (1933), p. 251, (1935), p. 271; *Vierteljahrshefte zur Statistik des Deutschen Reichs* (1938), p. II.140, (1940), p. II:80; *Statistisches Handbuch für Deutschland* (1949),

p. 467.

Disposable income: calculated for the interwar period from Albrecht Ritschl (2002), *Deutschlands Krise und Konjunktur 1924-1934. Binnenkonjunktur, Auslandsverschuldung und Reparationsproblem zwischen Dawes-Plan und Transfersperre*, Berlin: Akademie, Tables A12, B1, B2 and B5, and Walther G. Hoffmann and J. Heinz Müller (1959), *Das deutsche Volkseinkommen 1851-1957*, Tübingen: Mohr Siebeck, pp. 43, 47, 49, 54; for 1950-55 from *Statistisches Jahrbuch für die Bundesrepublik Deutschland* (1953), p. 451, (1956), pp. 377, 398, (1954), p. 403, (1957), p. 418, and (1958), p. 481.

Table 3 Involuntary Substitution: Real Disposable Income per Capita and per Capita Food Consumption in Germany, 1935-36 vs. 1927-28 change in per cent)

Year	Ø 1935-36
<i>Real income per capita</i>	-1
Skimmed milk	+168
Butter	+13
Rye flour products	+5
Pork	+3
Potatoes	+1
Total meat	± 0
Eggs	± 0
Sugar	-1
Vegetables	-5
Total fat	-5
Full-cream milk	-8
Fresh fruits	-8
Margarine	-8
Tropical fruits	-9
Wheat flour products	-9
Beef	-9

Notes: 1927-28: Germany without Saarland; 1937-38: Germany with Saarland and without Austria.

Sources: Grupe (1957), pp. II.88f.

Figure 1a Policy measures to restrict the consumption of a 'rationed' good

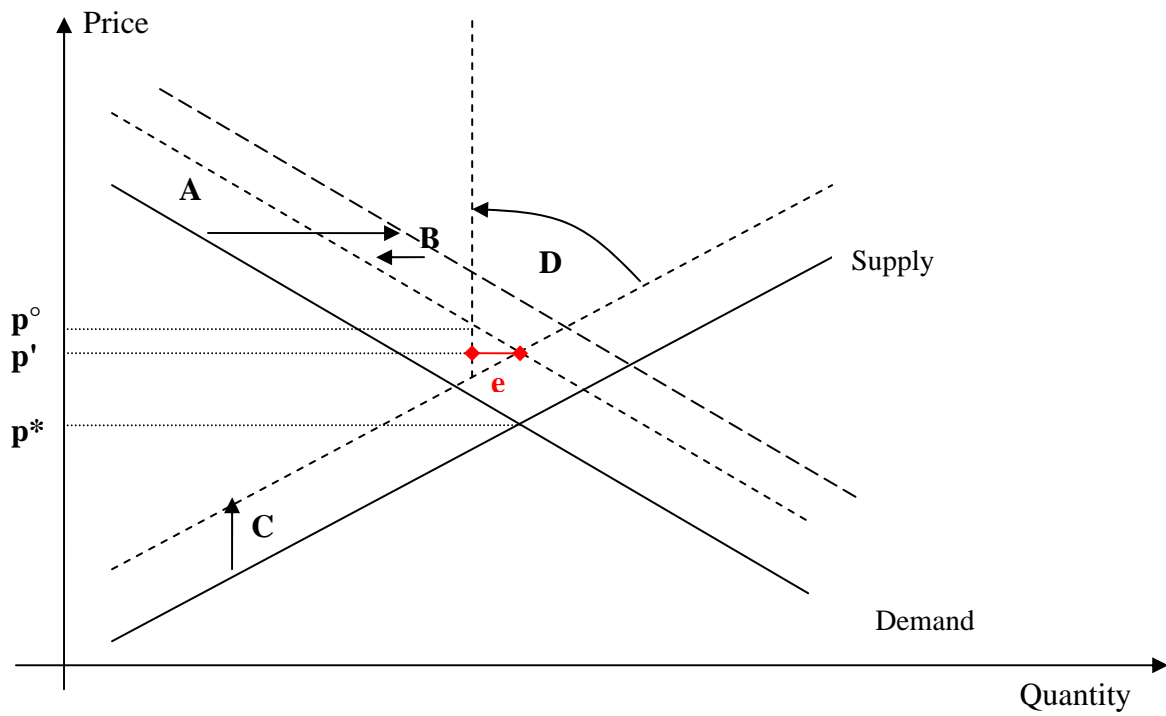


Figure 1b Policy measures to encourage the consumption of a 'recommended' good

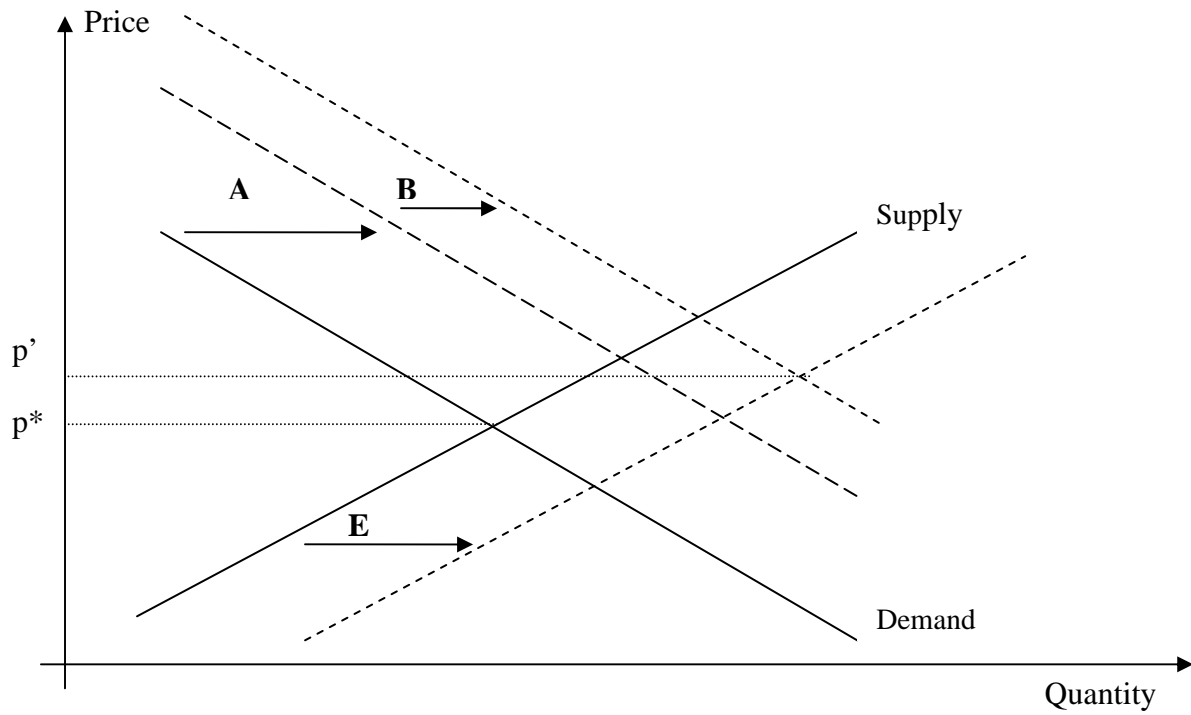
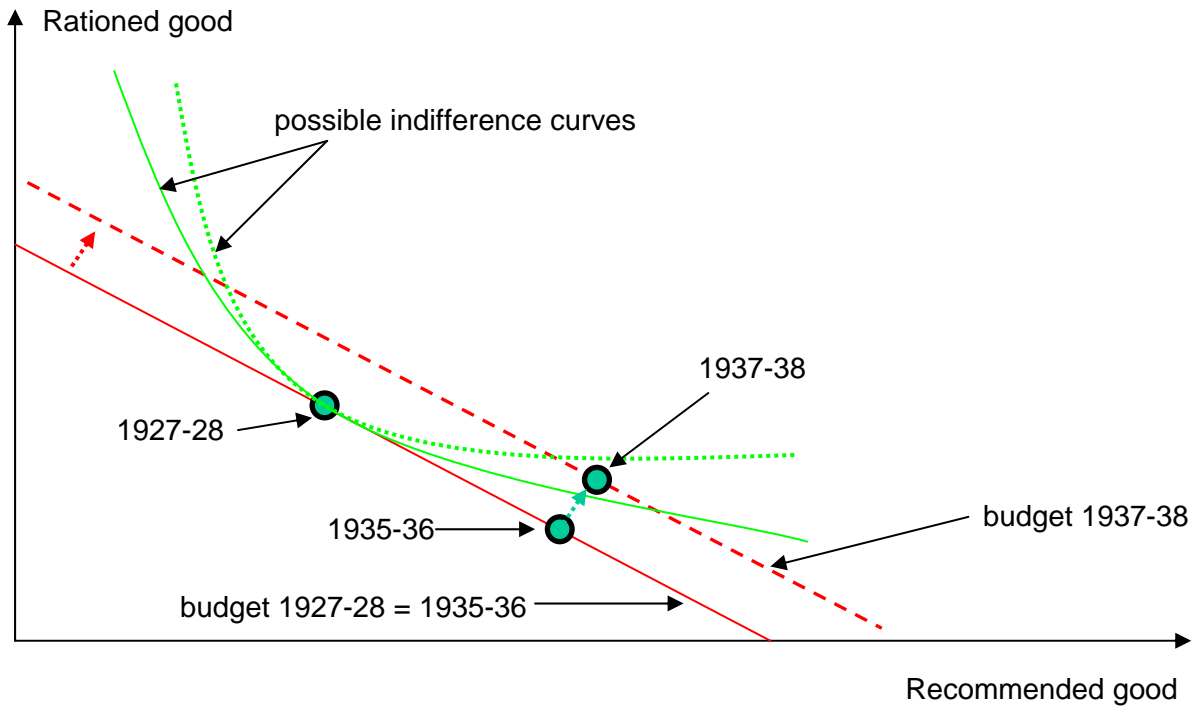


Figure 2 Food consumption bundles of 1927-28, 1935-36 and 1937-38 valued by prices of 1927-28



FZID Discussion Papers

Competence Centers:

IK:	Innovation and Knowledge
ICT:	Information Systems and Communication Systems
CRFM:	Corporate Finance and Risk Management
HCM:	Health Care Management
CM:	Communication Management
MM:	Marketing Management
ECO:	Economics
SE:	Sustainability and Ethics

Download FZID Discussion Papers from our homepage: <https://fzid.uni-hohenheim.de/71978.html>

Nr.	Autor	Titel	CC
01-2009	Julian P. Christ	NEW ECONOMIC GEOGRAPHY RELOADED: Localized Knowledge Spillovers and the Geography of Innovation	IK
02-2009	André P. Slowak	MARKET FIELD STRUCTURE & DYNAMICS IN INDUSTRIAL AUTOMATION	IK
03-2009	Pier Paolo Saviotti and Andreas Pyka	GENERALIZED BARRIERS TO ENTRY AND ECONOMIC DEVELOPMENT	IK
04-2009	Uwe Focht, Andreas Richter, and Jörg Schiller	INTERMEDIATION AND MATCHING IN INSURANCE MARKETS	HCM
05-2009	Julian P. Christ and André P. Slowak	WHY BLU-RAY VS. HD-DVD IS NOT VHS VS. BETAMAX: THE CO-EVOLUTION OF STANDARD-SETTING CONSORTIA	IK
06-2009	Gabriel Felbermayr, Mario Larch, and Wolfgang Lechthaler	UNEMPLOYMENT IN AN INTERDEPENDENT WORLD	ECO
07-2009	Steffen Otterbach	MISMATCHES BETWEEN ACTUAL AND PREFERRED WORK TIME: Empirical Evidence of Hours Constraints in 21 Countries	HCM
08-2009	Sven Wydra	PRODUCTION AND EMPLOYMENT IMPACTS OF NEW TECHNOLOGIES – ANALYSIS FOR BIOTECHNOLOGY	IK
09-2009	Ralf Richter and Jochen Streb	CATCHING-UP AND FALLING BEHIND KNOWLEDGE SPILLOVER FROM AMERICAN TO GERMAN MACHINE TOOL MAKERS	IK

Nr.	Autor	Titel	CC
10-2010	Rahel Aichele and Gabriel Felbermayr	KYOTO AND THE CARBON CONTENT OF TRADE	ECO
11-2010	David E. Bloom and Alfonso Sousa-Poza	ECONOMIC CONSEQUENCES OF LOW FERTILITY IN EUROPE	HCM
12-2010	Michael Ahlheim and Oliver Frör	DRINKING AND PROTECTING – A MARKET APPROACH TO THE PRESERVATION OF CORK OAK LANDSCAPES	ECO
13-2010	Michael Ahlheim, Oliver Frör, Antonia Heinke, Nguyen Minh Duc, and Pham Van Dinh	LABOUR AS A UTILITY MEASURE IN CONTINGENT VALUATION STUDIES – HOW GOOD IS IT REALLY?	ECO
14-2010	Julian P. Christ	THE GEOGRAPHY AND CO-LOCATION OF EUROPEAN TECHNOLOGY-SPECIFIC CO-INVENTORSHIP NETWORKS	IK
15-2010	Harald Degner	WINDOWS OF TECHNOLOGICAL OPPORTUNITY DO TECHNOLOGICAL BOOMS INFLUENCE THE RELATIONSHIP BETWEEN FIRM SIZE AND INNOVATIVENESS?	IK
16-2010	Tobias A. Jopp	THE WELFARE STATE EVOLVES: GERMAN KNAPPSCHAFTEN, 1854-1923	HCM
17-2010	Stefan Kirn (Ed.)	PROCESS OF CHANGE IN ORGANISATIONS THROUGH eHEALTH	ICT
18-2010	Jörg Schiller	ÖKONOMISCHE ASPEKTE DER ENTLOHNUNG UND REGULIERUNG UNABHÄNGIGER VERSICHERUNGSVERMITTLER	HCM
19-2010	Frauke Lammers and Jörg Schiller	CONTRACT DESIGN AND INSURANCE FRAUD: AN EXPERIMENTAL INVESTIGATION	HCM
20-2010	Martyna Marczak and Thomas Beissinger	REAL WAGES AND THE BUSINESS CYCLE IN GERMANY	ECO
21-2010	Harald Degner and Jochen Streb	FOREIGN PATENTING IN GERMANY, 1877-1932	IK
22-2010	Heiko Stüber and Thomas Beissinger	DOES DOWNWARD NOMINAL WAGE RIGIDITY DAMPEN WAGE INCREASES?	ECO
23-2010	Mark Spoerer and Thomas Beissinger	GUNS AND BUTTER – BUT NO MARGARINE: THE IMPACT OF NAZI ECONOMIC POLICIES ON GERMAN FOOD CONSUMPTION, 1933-38	ECO



FORSCHUNGSZENTRUM FZID

Universität Hohenheim
Forschungszentrum
Innovation und Dienstleistung
Fruwirthstr. 12

D-70593 Stuttgart

Phone +49 (0)711 / 459-22476

Fax +49 (0)711 / 459-23360

Internet www.fzid.uni-hohenheim.de