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Evaluating the Swiss Transitory Labour Contribution to Germany in the Second World War

Eric Golson

During the Second World War, the importation of labour became crucial to sustaining the economies of Germany and Great Britain. Histories of southern German firms during the Second World War suggest that Switzerland provided many highly-skilled labourers for Germany's war effort, but no study has to date quantified these contributions. This paper asserts the labour exchanges within a free movement and trade area in the border region of Switzerland and Germany were a failure. Instead of a desired workforce of 35 000, a maximum of 1 800 Swiss workers is ascertained to have worked in the German part of this area, representing 7.5% of the total labour force, 12% of the highly-skilled labour force and over 20% of the metal workers in the ten-kilometre German zone. Swiss contributions are somewhat offset by Germans working in the Swiss zone. Ultimately this paper suggests that, despite initially being supportive of increased labour transfers at the start of the war, the Swiss government sought to limit such transfers from 1941. More generally, the economics of this work became increasingly unfavourable, leading to fewer temporary workers in Germany.

Introduction

Maintaining a steady supply of labour is an important part of any war economy. An insufficient number of workers and soldiers foreshadow eventual battlefield defeat. During the Second World War, the importation of labour became crucial to sustaining the economies of Germany and Great Britain. It can be argued a lack of manpower prevented Germany from creating a sufficient military force to maintain its grip on much of Europe. Learning from its mistakes in the Great War Germany quickly tried to use foreign voluntary replace German workers sent to the fronts, but these efforts proved insufficient. Germany eventually resorted to forced labour for which it is well known. Great Britain relied

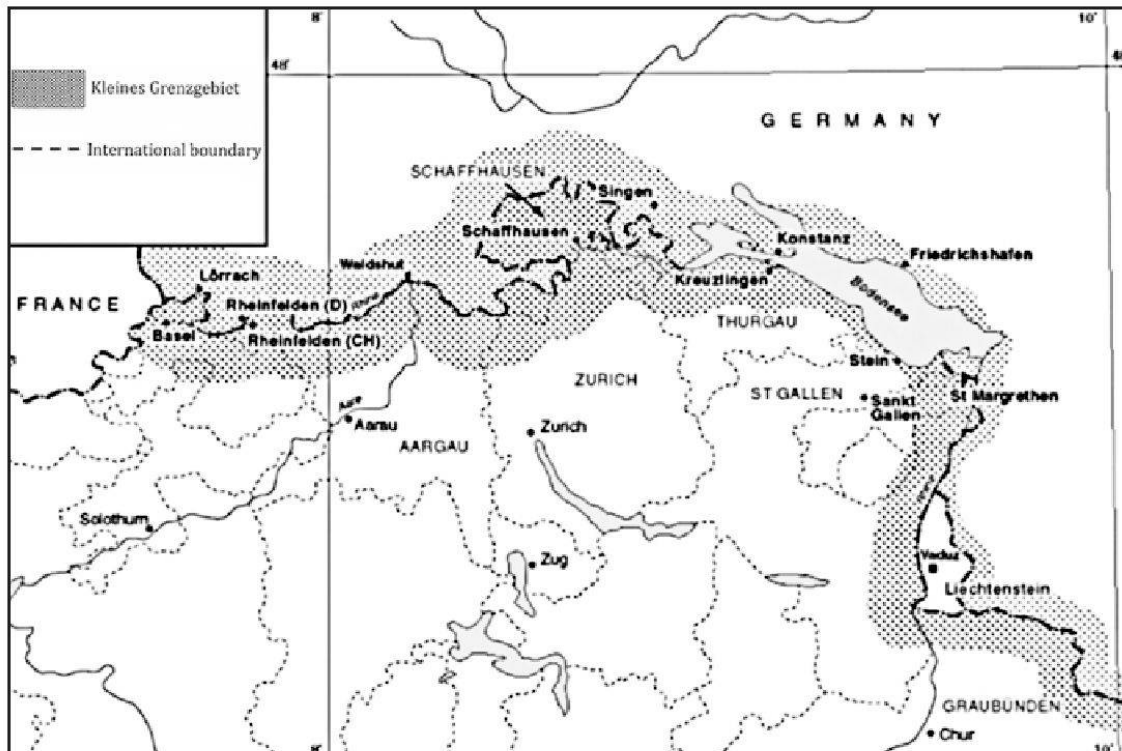


Figure 1. Swiss-German *Kleines Grenzgebiet*, 1939, with internal Swiss borders. Source: Author.

on the aid of its colonies, Commonwealth partners and the United States for additional manpower and ultimately won the war through sheer mathematical advantage. A little discussed contribution to both war efforts is neutral labour.

This paper focuses on Swiss transitory labour in wartime Germany as an example of voluntary labour programmes in Germany. These Swiss citizens were not regular residents of Germany, but rather commuters. Switzerland shared a land border and sections of the Swiss population identified with Germany.¹ Individuals living within a 10-km area on either side of the border could move freely within the overall zone for any reason, including labour; they could also transfer money and goods up to certain limits freely across the border.² Figure 1 shows the *Kleine Grenzgebiet* area with the internal Swiss cantonal borders. Success in a belligerent's ability to recruit foreign labour was dependent both on its geographic access to the neutral and the ideological alignment of the neutral. The Swiss programme scored well on both accounts as geography

- 1 Schweizerisches Bundesarchiv, Bern (BAr), E1070/1000-34/123; Schweizerisch-deutsches Abkommen über den kleinen Grenzverkehr, 9 March 1939; BAr, E1070/1000-34/123, message confirming Agreement dated 29 August 1939.
- 2 BAr, E2001D/1000-1152/38: memo dated 17 February 1940, p. 6f.

was close and political alignment was strong given the common language and sentiments. By contrast other European neutrals were limited in some regard. Separated by the North Sea, the Swedes could not easily work in Germany or Great Britain in any significant number. No more than a few hundred Swedes worked in Continental Europe, several in Swedish-owned ball bearing factories. Although they had access to both Germany and Britain, ideological alignment meant the Spaniards were focused on providing labour to Germany; they were frozen out of the closest British labour market, Gibraltar, because of security concerns. Switzerland's close proximity to Germany enabled more substantive labour transfers; large numbers of Swiss were unable to work in Great Britain because of the blockade. Before the war, other countries, including the Netherlands, Belgium and Luxembourg, operated voluntary arrangements similar to Switzerland. But, these agreements terminated with the start of hostilities and from mid-1942 onwards Germany had to increasingly focus on coercive methods to attract labour from these countries after the realities of occupation made cooperation increasingly less attractive.³

This general story is consistent with the overall changes seen in Swiss Foreign and economic policy during the period. *Commission of Independent Experts for the Second World War* are particularly useful in this context. Swiss trade relations during the Second World War are reviewed in *Schweizerische Aussenwirtschaftspolitik 1930–1948*.⁴ Because the Commission was formed in response to American criticism of Switzerland's wartime role, it particularly scrutinises Swiss-German and Swiss-Italian economic relations. For example, a part of its final report asserts:

The Axis partners benefited mainly from three commercial services by Switzerland: first, it provided goods vital to the war effort and electricity, for which it paid a clearing credit of billions; second, it provided direct transit between the Axis partners, Germany and Italy; and third, it received benefits from the free movement of capital, serving the international gold and foreign exchange needs of the Axis.⁵

While it does not cover commuting labour, the Commission of Independent Experts for the Second World War does give us a framework for un-

3 Edward Homze, *Foreign Labour*, Princeton, 1967.

4 Martin Meier, Stefan Frech, Thomas Gees, and Blaise Kropf (Commission of Independent Experts for the Second World War), *Schweizerische Aussenwirtschaftspolitik 1930–1948*, Zurich 2002; Stefan Frech (Commission of Independent Experts for the Second World War), *Clearing: Der Zahlungsverkehr der Schweiz mit den Achsenmächten*, Zurich 2001.

5 Meier et al., *op. cit.*, p. 304.

derstanding the wartime political changes in Switzerland's relationships with Germany, the Allies and other neutrals. We can also contrast them against the findings of this study. Neville Wylie provides a separate British-centred diplomatic history *Britain, Switzerland and the Second World War*, which taken together with the Commission study, indicate there are roughly four discrete periods into which Swiss economic relations with the belligerents can be divided.⁶ First, the initial nine months (September 1939 to June 1940) during which the pre-war status quo was maintained: individual belligerents did their utmost to ensure access to Swiss manufacturing. But this study shows that even in the early period the number of commuting workers are declining. The second, from June 1940 to the end of 1942 is marked by an overt dependence on Germany for imports and the granting of export credits. The third period from the end of 1942 until January 1944 extended the status quo: despite being surrounded by German, the Swiss government was increasingly willing to defer to Allied requests, but was reluctant to codify these arrangements formally. The fourth period, from January 1944 until the end of the war, witnessed Swiss deference to the Allies, an end to trade loans and limits on trade with Germany. Throughout all of the four periods there was a decline in Swiss commuting to Germany, regardless of the increases or decreases in trade and political connections between Switzerland and Germany. The Swiss commuting within the *Kleine Grenzgebiet* zone offer us a unique view because their choice to work in Germany was voluntary, suggesting the economics of doing business in Germany declined much earlier than the traditional political or trade relations histories might suggest. These declines were in the face of considerable German pressure to increase the number of workers coming from Switzerland.

The *Kleine Grenzgebiet* had many natural advantages during the Second World War for Germany's strained labour and capital. Swiss-owned manufacturing plants had long been established in the German part of the zone. These facilities used fewer German resources than similar German facilities elsewhere.⁷ Germany did not have to house, clothe or feed this workforce, based in Switzerland. The Swiss Federal Railways transported the workers on tracks powered by electricity from Swiss hydro-electric plants along the Rhein to such German cities as Waldshut,

6 Neville Wylie, *Britain, Switzerland and the Second World War*, Oxford 2003. Meier et al., *op. cit.*

7 Direktorium der Gesellschaft ALAG (Hg.), *Geschichte der Aluminium-Industrie-Aktien-Gesellschaft Neuhausen 1888–1938*, 2. Bd., Zurich 1943, p. 139–152; Hans Ulrich Wipf, *Georg Fischer AG, 1930–1945*, Zurich 2001, p. 181–434.

Singen and Konstanz.⁸ Switzerland also provided some raw materials for businesses in this area.⁹ These advantages persuaded Germany to seek increased production and employment there.

Consistent with their desire to increase economic links with Switzerland during the years of the war, Germany tried to recruit 35 000 transitory highly-skilled Swiss metal and building workers into this area.¹⁰ Despite devoting a considerable amount of energy to attracting neutral labour, this study finds at most 1 800 Swiss transitory labourers crossed the border on a regular basis. Numbers decline substantially over the course of the war. October 1941 German Labour Ministry statistics showing 39 564 ‘temporary’ neutral workers in Germany, representing 1.1% of the German workforce;¹¹ of these, it indicates 16 970 (42.89%) are Swiss.¹² But this seems an overstatement given separate German border crossing statistics for January 1940 indicate, on average, only 2 552 daily border crossings, of which only 1 285 emerge as Swiss.¹³ By comparison some 862 180 workers are from the occupied territories in April 1941, representing nearly 23.9% of the German workforce.¹⁴ Historian Edward Homze attributes the low number of voluntary neutral workers to a reluctance to work in wartime Germany.¹⁵ For the Spanish workers in Germany geographic considerations, financial compensation and conditions limited the number workers, although changing political allegiances also clearly played a role.¹⁶

Political ideology and the changing fortunes of war also played an important part in determining voluntary labour contributions. The two largest neutral contributors, Spain and Switzerland, had two very different political and ideological approaches in allowing their residents to work in Germany. The Swiss approach involved less direct government

8 Swiss Federal Railways, *Horaire Suisse 1943*, Zurich 1942; Jean-Daniel Kleisl (Commission of Independent Experts for the Second World War), *Electricité Suisse et Troisième Reich*, Zurich 2001.

9 Roland Peter, Myriam Rais-Liechti, Christian Ruch (Internationale Expertenkommission Schweiz), *Geschäfte und Zwangsarbeit: Schweizerische Industrieunternehmen im Dritten Reich*, Zurich 2001.

10 National Archives and Records Administration (NARA), College Park, Maryland, USA, RG242/T-77/243/986448-986453; NARA RG242/T-77/243/986769; NARA RG242/T-77/243/986482; NARA RG242/T-77/243/986480-81; NARA RG242/T-77/243/986440-986458.

11 Homze, *op. cit.*, p. 65.

12 Homze, *op. cit.*, p. 57.

13 NARA RG242/T-77/243/901075-901076.

14 NARA T-77/247/1066735, memo dated 30 April 1941.

15 Homze, *op. cit.*, p. 64.

16 Eric Golson, Spanish Civilian Labour for Germany? Re-evaluating Neutral Spain’s Role, in: *Revista de Historia Económica: Journal of Iberian and Latin American Economic History*, 31 1(2013), p. 145–170.

intervention, allowing individuals living within a certain area to work freely in Germany. The agreement allowed cash remittances of 10 Reichsmarks per working day, more than the average wage levels.¹⁷ The *Kleine Grenzgebiet* is the only example of labour exchange where individuals could live in a neutral country and cross the border daily to voluntarily work in a belligerent. It gives a purer example of worker intentions: the Swiss within the zone were largely free to move according to economic circumstances. Swiss state intervention was limited by the agreement to providing the permits for border transit and regulating what could be taken across the border. However, from 1941 onwards, Swiss government sought to reduce the incentives for the Swiss working in Germany by increasing the costs of their permits and refusing to allow increased cash remittances to compensate for a lack of goods in Germany. Workers relinquished their jobs faster than in the German workforce, after 1943 in particular.¹⁸ This is consistent with the general decline in Swiss-German economic relations after 1942, as previously suggested by Wylie.

By contrast, the Spanish approach was one of direct government intervention in support of Germany during the war. In a closer alignment with the German authorities starting in mid-1941, the Spanish government provided volunteers for the factories; this programme was a state sponsored, direct recruitment effort. In August 1943, the Spanish government decided to informally repatriate as many of the Spanish workers as possible due to poor conditions in Germany; however, the Spanish did not abandon those who wanted to stay: throughout the remainder of the war and until December 1945, the Spanish continued a cash transfer programme for the workers still in Germany and paid for their repatriation. In contrast to the Swiss, the Spanish state paid a large proportion of the workers' expenses, but did retain some control over those in Germany.¹⁹

Historians Christian Ruch, Myriam Rais-Liechti, and Roland Peter, members of the Commission of Independent Experts (CIE) established to study Swiss neutrality in the Second World War, suggest relatively close links between Swiss businesses in the German part of the *Kleine Grenzgebiet* and their parent companies in Switzerland. The CIE stud-

17 BAr E1070/1000-34/123: agreement; BAr E7160-01/1968-223/249: undated memo marked «Bericht über die Grenzverkehrsverhandlungen mit Deutschland vom 10. bis 13. August».

18 Roland Peter, *Rüstungspolitik in Baden. Kriegswirtschaft und Arbeitseinsatz in einer Grenzregion im Zweiten Weltkrieg*, Munich 1995, p. 336.

19 Golson, *op. cit.*

ies provide an April 1943 figure of 26 876 non-German labourers in these Swiss firms in Southern Germany, in an employment total of 158 690; this includes workers both inside and outside the *Kleinen Grenzverkehr*.²⁰ They worked for companies including the Swiss aluminium conglomerate, *Aluminium Industrie AG (AIAG)*, the chemical company Lonza and food companies Maggi and Nestlé.²¹ The first two were especially important to the German war effort, with new statistics showing about 7% of all German carbide and 15% of all German aluminium in this area.²² The Swiss parents of these subsidiary companies demonstrably maintained significant control over them, providing, *inter alia*, managerial expertise, machine tools, raw materials, capital for expansion and other necessities for their daily operation.²³ In a discussion of factory workers from Eastern Europe, the authors imply a net Swiss labour contribution to the *Kleinen Grenzverkehr*, but they do not provide a full account of it.²⁴

Skills are also an important factor in the neutral contributions. A disproportionate number of highly productive, skilled male workers were recruited by the Germans from Switzerland. The Swiss were already more likely to send high skilled workers to Germany when compared to other neutrals given the composition of their workforce; but the profiles of the commuting workers are disproportionately even higher skilled than the catchment region. The Swiss worked in war factories located in cities and towns immediately across the border, while the notably fewer Germans commuting to Switzerland worked as lower skilled and agricultural labour. As a result of the skill and gender disparity, the Swiss provided Germany with an economic contribution three times the counter flow.

Methodology

In estimating the workers, only the voluntary «guest» labourers who were:

1. Not permanent residents in their country of employment
2. Citizens of their home country
3. Able to remit their earnings to their home country

are counted. The current system of identifying foreign workers on the basis of citizenship is irrelevant if they cannot leave the belligerent coun-

20 Peter et al., *op. cit.*, p. 221.

21 Peter et al., *op. cit.*, p. 123–200.

22 Cornelia Rauh, *Schweizer Aluminium für Hitlers Krieg?*, Munich 2009; J.-D. Kleisl, *op. cit.*, p. 63 and 101.

23 Peter et al., *op. cit.*, p. 79–211.

24 Peter et al., *op. cit.*, p. 216–233.

try with their earnings. For Germany and Switzerland, these exchanges were limited to those living and working within their respective areas of the *Kleine Grenzgebiet*.²⁵ Only permanent resident aliens who could return with their earnings are counted.

Canton	Swiss Workers in Germany	German Workers in Switzerland
Basel-Stadt (BS)	Basel-Stadt Police through April 1940; then based on Aargau/Zürich trends	Basel-Stadt Police through April 1940; then based on Aargau trends
Aargau (AG)	Bi-annual foreign labour surveys	Bi-annual foreign labour surveys
Zürich (ZH)	<i>Grenzkarte</i> log books, maintained by Police	1943 Swiss Federal Report; Aargau trends used for 1939–1943 and 1943–1946
Schaffhausen (SH) Thurgau (TG) St.Gallen/Graubünden (SG/GR)	Based on relative Federal Trade Statistics, November 1939 with 1940–1946 trends estimated from Aargau and Zürich	

Table 1. Sources for Swiss Worker Figures, by Canton.

Undeniably, these limitations reduce the scope of this study. German labour expert Mark Spoerer and German war-time statistics indicate there were approximately 16 000–18 000 Swiss citizens working in Germany during the Second World War;²⁶ but, as this paper shows, fewer than 1 800 of these Swiss citizens were residents of Switzerland commuting. Only the Swiss residents working in Germany were subject to Swiss border controls, Swiss laws and the limitations on transferring remittances. The remaining 14 000–16 000 Swiss citizens in Germany were permanent residents there and hence largely beyond Swiss jurisdiction. They could not remit funds from Germany unless parallel contra-funds were available.²⁷

25 See Figures 1 and 2; BA R E1070/1000-34/123, agreement dated 9 March 1939.

26 Mark Spoerer, *Zwangsarbeit unter dem Hakenkreuz: Ausländische Zivilarbeiter, Kriegsgefangene und Häftlinge im Deutschen Reich und im besetzten Europa 1939–1945*, Stuttgart 2001, p. 87 and 222; NARA RG242/T-77/243/986879-986880; NARA RG242/T-77/243/985921-985922; Imperial War Museum Archive, Duxford, Britain (IWM-D) FD847/46, graphic entitled «Der Arbeitseinsatz ziviler Ausländer nach der Staatsangehörigkeit» in S-Buch, Arbeitseinsatz.

27 BA R E1070/1000-34/123, letter dated 8 February 1940.

For greatest accuracy, whenever possible this study uses figures from the lowest government level; this means using largely Swiss sources. In Germany, organizational responsibility for the *Kleine Grenzgebiet* was highly centralized. Searches of both Federal and local German records have not yielded entries which survived the war; in Switzerland, monitoring, shared between the Swiss Federal Government and the individual cantons bordering Germany, was highly decentralized. Decentralization created duplicate entities with overlapping responsibilities, many maintaining copies of cantonal records. Estimates are derived from these materials.

As seen in Table 1, only a few records and statistics on Swiss transitory workers in Germany have survived. Canton Zürich maintained complete indices of the 3 612 *Grenzkarte* [border passes] issued from 1 January 1938 to 31 December 1946, along with relevant personal data. These records have been redacted and sorted to reveal 2 085 permits issued to unique individuals.²⁸ The *Arbeitsamt* [Labour Bureau] in Canton Aargau counted migrant workers by skill-type and gender bi-yearly.²⁹ The police in Canton Basel-Stadt maintained records on the *Grenzkarte* holders during the early war period which included name, date of birth, and occupation; genders can be reasonably assumed from the given names.³⁰ Statistics for Graubünden provide a very small number of transitory workers of unknown skill and gender. A summary of these statistics is reported later.

As unit level figures for Cantons Schaffhausen, Thurgau, St. Gallen and are not available, they must be obtained through a proportional comparison of the *Kleine Grenzgebiet* trade with Cantons Basel-Stadt, Zürich, and Aargau according to Swiss Federal statistics;³¹ in estimating, it must be assumed that workers in the former group remitted the same amount in cash and goods as in the latter. Total economic activity of Canton Schaffhausen is 20% of the customs district including Cantons Basel-Stadt, Aargau, and Zürich in November 1939 and 150% for Canton Thurgau. The homogeneity of the regions makes this reasonable.³² The information thus derived provides the total number of Swiss workers in Germany every quarter from November 1939 to December 1945;

28 Archives of the Canton Zurich (StAZH) BEZ/AND/134/2-3.

29 Archives of the Canton Aargau (StAAG) BA.09.0596, reports; StAAG BA.09.0692, reports; StAAG BA.09.0693, reports.

30 Archives of the Canton Basel-Stadt (StABS) PD-REG/8c/(1)/2-1:3, lists of border permits attached to correspondence dated between 28 February and 11 April 1940.

31 BAr E2001D/1000-1552/38, letter dated 22 May 1940; BAr E6351F/1000-1044, letter dated 31 January 1939; BAr E6351F/1000-1044/491, letter dated 24 February 1939.

32 Eidgenössisches Statistisches Amt, *Statistisches Jahrbuch der Schweiz 1944*, Basel 1945.

for comparative purposes, these figures are extended backwards to June 1936 using available wage remittance statistics for the entire *Kleine Grenzgebiet*.³³

The archival figures for German residents working in Switzerland are sparser than the converse totals. In Canton Basel-Stadt, the police maintained registers of those who obtained permits; the Canton Aargau *Arbeitsamt* [Labour Bureau] also maintained bi-annual counts of German workers in Switzerland.³⁴ The Swiss Federal Customs Office had figures for the number of German residents commuting to Cantons Zürich, Schaffhausen, Thurgau, St. Gallen, and Graubünden for work in 1943.³⁵ Applying the changes seen in Canton Aargau to the figures for the other cantons gives a complete count for German workers in Switzerland every quarter from November 1939 to June 1945.³⁶

Kreis District Number	Capital	Number of Workers	Est. High Skilled	Est. Metal Workers
Baden-11	Lörrach	2 784	720	270
Baden-8	Säckingen	2 754	825	550
Baden-3	Waldshut	1 771	890	355
Baden-27	Donaueschingen	4 134	2 730	1 030
Baden-18	Konstanz	13 507	6 100	1 300
Total		24 950	11 625	3 505

Table 2. Labour Force in Baden Kleines *Grenzgebiet*.

Sources: Bundesarchiv – Militärarchiv, Freiburg i.Br., Deutschland (BA-MA), RW 20-5/51-57; Peter, *op. cit.*, S. 92.

Using the permit and border crossing figures for both groups of labourers allows additional statistics for each worker group to be calculated. Estimates are made of gender, skill levels, and the earnings of each group each quarter throughout the war.

33 BAr E3220B/1000-773/22, report dated January 1940, p. 15f.; Eidgenössisches Statistisches Amt, *op. cit.*, p. 10.

34 StABS PD-REG/8c/(1)/2-1:3, lists of border permits attached to correspondence dated between 28 February and 11 April 1940; StAAG BA.09.0596, reports; StAAG BA.09.0692, reports; StAAG BA.09.0693, reports.

35 BAr E6351F/1000-1046/12, letter dated 30 October 1943; BAr E6351F/1000-1046/12, letter dated 30 October 1943; BAr E6351F/1000-1046/12, letter dated 10 November 1943.

36 BAr E3220B/1000-773/22, report dated January 1940, p. 15f.; Eidgenössisches Statistisches Amt, *op. cit.*, 1945, p. 10.

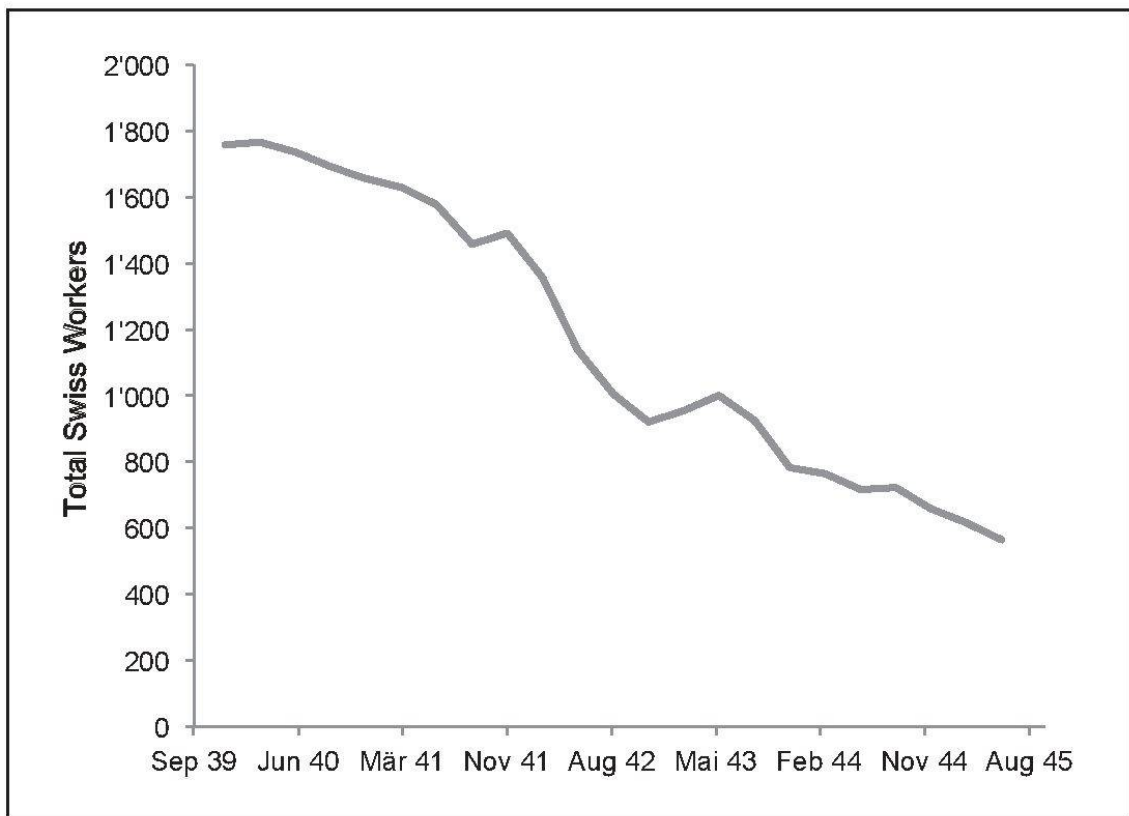


Figure 2. Swiss Transitory Labourers in Germany, December 1939 to June 1945. Sources: See Table 3 below.

Statistics generated by the *Rüstungsinspektion Oberrhein für Baden* [the Production Inspectorate for Baden, in the Upper Rhein Area] are used to generate figures for the actual number of German workers and their occupations in the *Kleine Grenzgebiet*. As no precise figures for the ten-kilometre zone are available, local districts [called *Kreis*] in which the ten-kilometre zone is situated (even partially) are used. As Table 2 shows, these districts include those with regional capitals in Lörrach, Säckingen, Waldshut, Donaueschingen, and Konstanz. With available information, this yields 24 950 workers in the German part of the ten-kilometre zone.³⁷ The estimated number of highly-skilled and metal workers in Baden is based on 1938 skill allocation figures, as shown graphically by the *Baden Statistische Landesamt* [Baden State Statistics Office].³⁸ Estimates for the number of workers in highly-skilled and metal-working jobs are included in Table 2. The 1938 percentages of skilled labour are multiplied by the

37 BA-MA RW20-5/51-57.

38 Peter, *op. cit.*, p. 92.

1943 worker figures, failing other statistics of the number of skilled workers. Although no compensation has been made, using 1938 skill figures introduces some downward bias, since the number of highly-skilled and metal workers should have increased during the war.

All the sources, both Swiss and German, admit substantial shortcomings. Most notably, there are potential bias effects, for available government statistics for most cantons provide only sporadic data points throughout the period. The long-term projections for Swiss commuting to Germany rely solely upon statistics from Cantons Zürich and Aargau; and on Canton Aargau alone for Germans commuting to Switzerland. Using the figures from so few cantons to project overall trends lets in bias effects for specific cantons. Although no evidence suggests this, it could very well be Aargau that experienced inordinate increases or reductions in its numbers of wartime workers. Given the information available, this potential error cannot be eliminated.

Swiss Workers in Germany

This section provides overall statistics for the Swiss residents working in the German *Kleine Grenzgebiet*. It determines that there was a maximum of 1 800 Swiss workers in Germany, mostly highly-skilled males, transiting between Switzerland and Germany from June 1936 through mid-1946, roughly 7.5% of the labour force in the *Kleine Grenzgebiet* area.³⁹ The figures declined steeply during the war.

Table 3 shows quarterly statistics for each canton, as well as the total number of Swiss workers commuting to the Baden *Kleine Grenzgebiet*. Cantonal figures reported in bold are taken from archival sources; those in normal typeface are generated from estimates, in accordance with previously-mentioned practice. As Table 7.3 and Figure 7.2 indicate, the population of Swiss workers commuting to work in the German *Kleine Grenzgebiet* declined from approximately 1 800 in December 1939 to about 560 by June 1945.⁴⁰

39 Peter, *op. cit.*, p. 92; BA-MA R20-5/51.

40 See sources for Appendix A.

Date	Total Workers Switzerland to Germany	Basel-Stadt	Aargau	Zürich	Schaffhausen	Thurgau	St.Gallen and Graubünden
Dec-39	1 759	326	130	190	130	972	11
Mar-40	1 767	308	127	201	132	988	11
Jun-40	1 737	303	124	199	130	971	11
Sep-40	1 692	295	120	194	126	946	11
Dec-40	1 657	289	117	191	124	926	10
Mar-41	1 630	284	119	183	122	912	10
Jun-41	1 579	276	120	170	118	885	10
Sep-41	1 458	255	122	142	110	819	9
Dec-41	1 492	262	131	137	112	840	10
Mar-42	1 358	239	122	121	102	766	9
Jun-42	1 140	201	113	87	86	645	7
Sep-42	1 004	177	102	74	76	569	6
Dec-42	920	162	90	72	70	521	6
Mar-43	954	168	92	77	72	539	6
Jun-43	1 001	176	93	85	76	565	6
Sep-43	925	163	90	73	70	523	6
Dec-43	783	139	87	47	60	445	5
Mar-44	764	136	86	45	58	435	5
Jun-44	716	127	84	37	55	409	5
Sep-44	723	128	74	52	55	410	5
Dec-44	658	116	64	52	50	372	4
Mar-45	616	108	52	60	46	346	4
Jun-45	563	98	39	66	42	315	4
Sep-45	1 418	244	58	221	105	782	9
Dec-45	1 451	251	77	202	108	805	9

Table 3. Swiss Transitory Labour in Germany by Original Canton Overall Statistics by Quarter. Sources: Figures in bold are taken from archival sources of the Cantonal Archives of Basel-Stadt, Aargau, Zurich, Schaffhausen, Thurgau, St. Gallen and Graubünden; figures in normal typeface are generated from estimates.

Breaking this decline into periods, from December 1939 to December 1941, the figures fell slowly, by about 15% of the workforce; however, as German efforts to mobilize labour and foreign labour recruitment in-

creased in 1942, the number of Swiss workers in the *Kleine Grenzgebiet* decreased more rapidly.⁴¹ From March to December 1942, just over one-third of this group stopped working in Germany. A slight increase of approximately 80 workers or about 10% of the workforce followed from December 1942 to June 1943; however, between June 1943 and June 1945, the number of these Swiss workers halved. The reasons for the rapid decline in June 1945 to the low point of 563 transitory workers – about 2.5% of the labour force in the ten-kilometre area – are discussed in the last section.

Skills and gender figures vary between cantons, depending on the economic environment in the area immediately past the border. Among the known figures, the workers leaving Canton Aargau to work in Rheinfelden and Waldshut were mostly highly-skilled male metal-workers, with 88% estimated as skilled and 86% male in December 1939;⁴² however, those leaving Zürich were largely unskilled (32%) and agricultural workers (42%); they typically owned farms immediately across the border. 90% of the workers from Zürich were male.

To provide a comprehensive skill and gender profile of all Swiss residents travelling to Germany beyond Cantons Aargau and Zürich requires certain assumptions about individual cantons for which no or limited data are available. Too little stand-alone information remains on the skill sets and gender distribution of workers in Cantons Basel-Stadt, Thurgau, Schaffhausen, St. Gallen and Graubünden for a complete wartime profile; however, the figures for these cantons can be estimated using known quantitative and qualitative data. Skills and gender figures are available for Canton Basel-Stadt for the two months ending April 1940. As the skills and gender concentrations in Cantons Aargau and Zürich do not vary widely, it is reasonable to assume that the skill and gender figures from Basel for workers in Canton Basel-Stadt last throughout the war. High per capita monthly earnings figures in the *Eidgenössische Statistische Amt* reports on the Austrian-Swiss *Kleiner Grenzverkehr* [small border traffic] indicate that workers from St. Gallen and Graubünden consisted entirely of highly-skilled men.⁴³

Gender and skills data for Cantons Schaffhausen and Thurgau must be estimates. With the lack of quantitative information, a gender and skill profile for these cantons must be built from qualitative knowledge. From the prevalence of factories for war materiel and the German desire to re-

41 Peter, *op. cit.*, p. 336.

42 StAAG BA.09.0596, reports; StAAG BA.09.0692, reports; StAAG BA.09.0693, reports.

43 BA r E3320B/1000-773/22, report dated January 1940.

cruit highly-skilled Swiss in the Schaffhausen-Singen area, it can reasonably be assumed that highly-skilled, male labourers formed the majority of those based in Canton Schaffhausen.⁴⁴ Swiss commuting from Thurgau to Konstanz worked in highly-skilled jobs in a city with both industry and commerce. The closest comparable canton for both is Aargau, where highly-skilled workers commuted to German industrial plants across the Rhein. Thus, gender and skills distribution estimates from Canton Aargau can be used for Cantons Schaffhausen and Thurgau.⁴⁵ The resulting estimates establish that most of the Swiss working in the German *Kleine Grenzgebiet* were skilled.

Despite the decline in the number of workers, the wartime skill profile of Swiss workers in the German *Kleine Grenzgebiet* remains fairly constant. Where displacement occurred, in the early part of the war, Swiss agricultural labour in Germany was typically replaced by skilled and unskilled workers. As Figure 3 reveals, the overall percentage of skilled labourers, starting at 70% in December 1939, reached a low of 58% in June 1943 and then returned to 74% by June 1945. Similar trends were noted in unskilled labour; at 15% in December 1939, unskilled labour reached 29% in June 1943 before returning to 21% of the total employed in December 1945. Agricultural labour remained a stable proportion of the labour force varying from 14% to 16% throughout the war. Using the December 1939 worker skill profile, 70% (1 260) of the Swiss workers in Germany were skilled, 270 were unskilled and 270 worked in agriculture. In the ten-kilometre zone, this labour would have represented about 12% of the skilled labour force.⁴⁶ Further estimated statistics on the number of metal-workers from Cantons Zürich and Aargau indicate that Switzerland supplied approximately 20% of the 3 505 skilled metal-workers in this part of Germany.⁴⁷

Using similar assumptions, it is possible to produce a gender distribution of the Swiss workforce in the German *Kleine Grenzgebiet*. A disproportionate number of working men travelled across the border. As seen in Figure 4, for almost the whole wartime period men made up 79% or more of the Swiss labour force commuting to Germany; the low point for male labour was December 1942, part of a decline which started for unknown reasons in December 1941. However, the number of men had

44 NARA RG242/T-77/243/986448-986453.

45 See summary figures in Appendix B.

46 See Table 2.

47 Ibid.

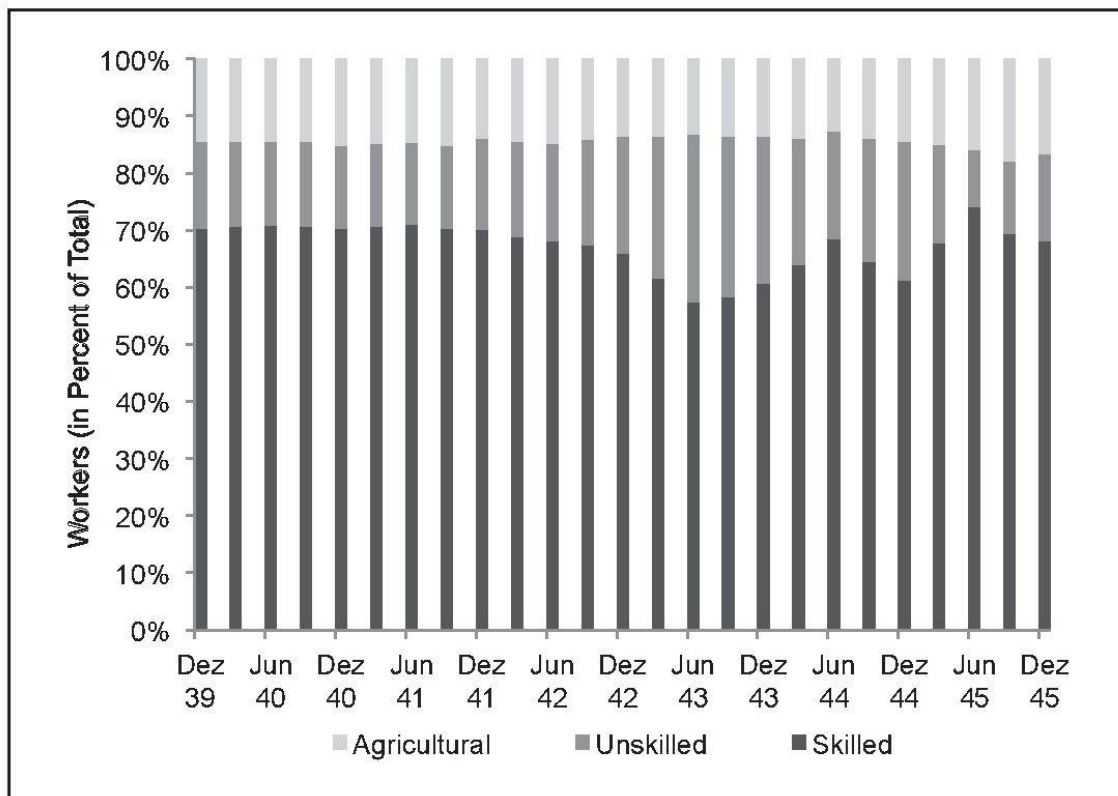


Figure 3. Swiss Residents Working in Germany, by Skill Type, December 1939 to December 1945. Sources: See Appendix A.

increased to 86% of the workforce by March 1944 and largely remained until the war ended.⁴⁸

The gender ratio suggests the Swiss *Kleine Grenzgebiet* workers resembled the workers migrating to Germany from other countries. On average, there were seventeen men for every three women in the Swiss *Kleine Grenzgebiet* group.⁴⁹ Statistics for voluntary labour from all countries suggest that 84% were men and 16% women.⁵⁰ Using the worker statistics, skill and gender profiles, moreover, the earnings of Swiss workers in Germany can be calculated.

Quarterly earnings for Swiss residents working in the German *Kleine Grenzgebiet* declined in tandem with the number of workers (see Figure 5). Some assumptions must be made to estimate earnings. Wage rates in wartime Germany are based on both skill level and gender; consequently its groups must be broken into gender-skill sub-groups, such as skilled males, skilled females, unskilled males, etc. The available statis-

48 See Appendix A.

49 Ibid.

50 NARA RG242/T-77/243/985921-985922.

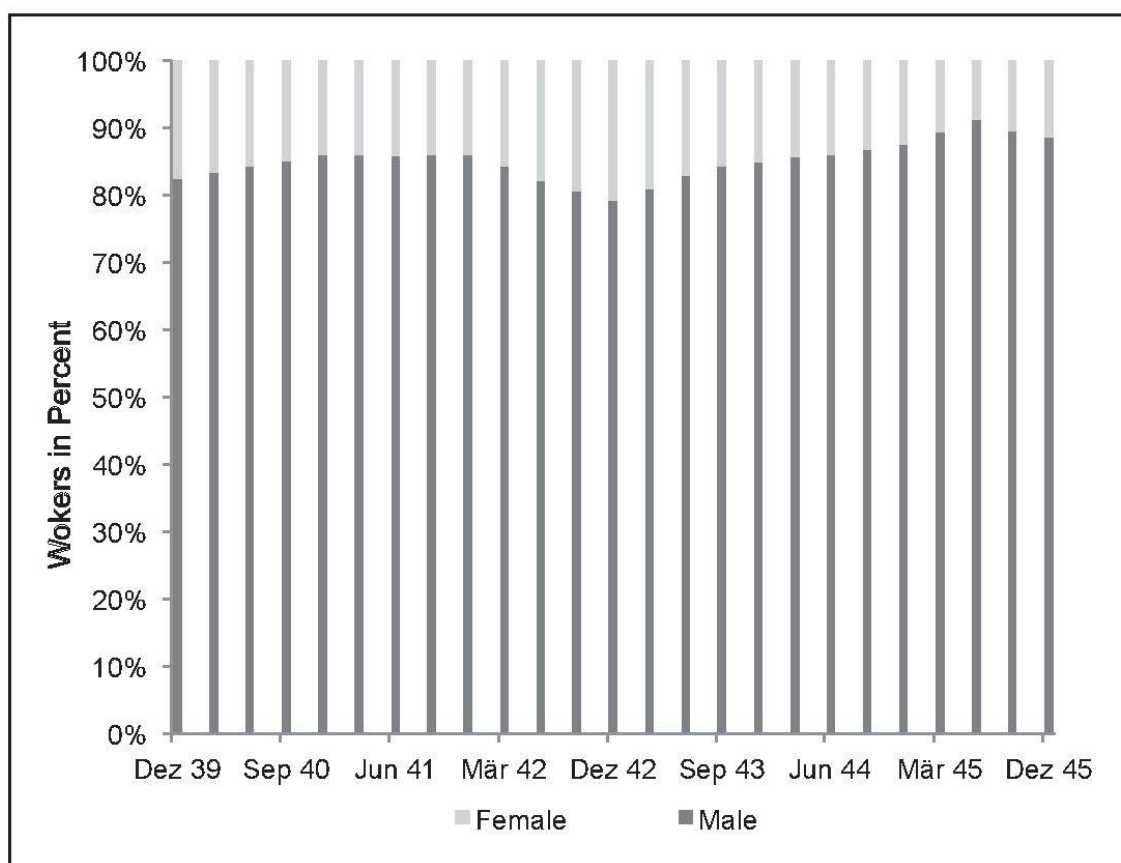


Figure 4. Gender Distribution of Swiss Residents Working in Germany, December 1939 to December 1945. Sources: See Appendix A.

tics for the distribution of workers from Canton Aargau suggest that overall the female population comprised 10% skilled, 57% unskilled and 33% agricultural.⁵¹ The number of male workers in each skill subset results from subtracting its total of female workers from the total in this skill level. Each skill-gender variant is then multiplied by its relevant average German salary, as reported in Appendix A.⁵² These Reichsmark salaries are converted at the constant wartime rate of 1.75 Swiss Francs per Reichsmark.⁵³

Using these assumptions, gross total estimated earnings for Swiss residents in Germany from December 1939 to June 1945 is 26.9 million Swiss Francs or approximately 0.32% of Swiss 1939 Net national income

51 StAAG BA.09.0596, reports; StAAG BA.09.0692, reports; StAAG BA.09.0693, reports.

52 Länderrat des Amerikanischen Besatzungsgebietes, *Statistisches Handbuch von Deutschland, 1928–1944*, Munich 1949, p. 470–472.

53 Eidgenössisches Statistisches Amt, *op. cit.*, p. 255.

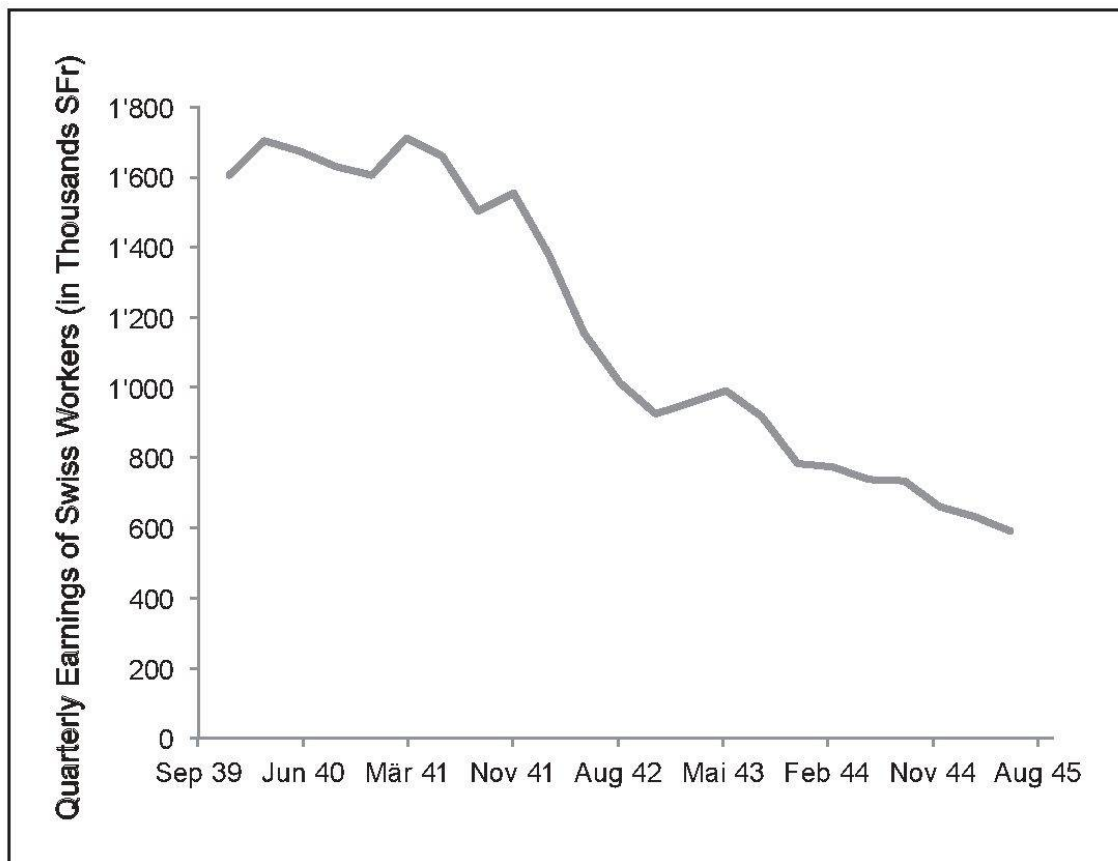


Figure 5. Total Quarterly Earnings of Swiss Residents Working in Germany, December 1939 to August 1945. Sources: See Appendix A; based on assumptions explained in the text.

(NNI).⁵⁴ Total earnings declined consistently each quarter throughout the war, largely in tandem with the overall reduction in the number of workers. Average wages fluctuated between 912 and 1 051 Swiss Francs per worker quarter, due to changes in the composition of the workforce and small fluctuations in the German pay rates.⁵⁵ These figures demonstrate that Switzerland's contribution to the German war effort was important in a few specific areas of skilled labour.

Although the ultimate number of these workers and their contribution to GDP was very small, their impact on German production for certain specialty items should not be discounted. As detailed in the CIE studies, Swiss labourers working in the German *Kleine Grenzgebiet* factories produced critical items for Germany, including aluminium, con-

54 Meier et al., *op. cit.*, p. 409.

55 See Appendix A; Länderrat des Amerikanischen Besatzungsgebietes, *op. cit.*, p. 470f.

densers, guns, machine tools, fittings, and other specialized hardware;⁵⁶ without these the German war-machine would have been considerably less effective. Of course, the number of Germans working in Switzerland correspondingly reduces the latter's contributions.

German Workers in Switzerland

This section examines how many Germans were working in Switzerland, together with their skill and gender variants and earnings. It establishes that no more than 1 400 Germans ever worked in the Swiss *Kleine Grenzgebiet* during the war and their numbers declined faster than their counterparts'. These German workers were substantially less skilled than the equivalent Swiss in Germany and contained higher proportions of women. Their profile accounts for the substantially lower earnings.

Date	Total Workers: Germans in Switzerland	Basel-Stadt	Aar-gau	Zürich	Schaff-hausen	Thur-gau	Cantons St.Gallen and Grau-bünden
Dec-39	1 384	938	46	108	12	97	183
Mar-40	1 225	831	41	96	10	86	161
Jun-40	1 065	724	36	83	9	75	139
Sep-40	919	617	30	71	8	64	129
Dec-40	772	510	25	59	6	53	119
Mar-41	736	490	24	56	6	50	110
Jun-41	702	469	23	54	6	48	101
Sep-41	667	449	22	52	6	46	93
Dec-41	581	388	19	45	5	40	85
Mar-42	583	408	20	47	5	42	61
Jun-42	558	408	20	47	5	42	36
Sep-42	572	418	21	48	5	43	37
Dec-42	586	428	21	49	5	44	38
Mar-43	530	388	19	45	5	40	34
Jun-43	474	347	17	40	4	36	31
Sep-43	405	296	15	34	4	30	26

56 Peter et al., *op. cit.*, p. 123–200; Kleisl, *op. cit.*, p. 63 and p. 101. Wipf, *op. cit.*, p. 275f.

Date	Total Workers: Germans in Switzerland	Basel-Stadt	Aargau	Zürich	Schaffhausen	Thurgau	Cantons St.Gallen and Graubünden
Dec-43	419	306	15	35	4	32	27
Mar-44	335	245	12	28	3	25	22
Jun-44	474	347	17	40	4	36	31
Sep-44	335	245	12	28	3	25	22
Dec-44	335	245	12	28	3	25	22
Mar-45	223	163	8	19	2	17	14
Jun-45	112	82	4	9	1	8	7
Sep-45	181	133	7	15	2	14	12
Dec-45	251	184	9	21	2	19	16

Table 4. Germans Working in Switzerland, by Canton, December 1939 to December 1945. Sources: National and cantonal statistics, as explained in the text (discussion of archival sources).

War-time figures for Germans working in Switzerland derive from Swiss cantonal figures combined with a set of October 1943 reports from the Swiss *Oberzolldirektion* on German transitory workers in Switzerland. Statistics for Canton Aargau originate from the *Aargau Arbeitsamt* reports previously mentioned and cover the whole war.⁵⁷ For other cantons it has been necessary to rely on 1943 *Oberzolldirektion* reports (covering 1942), which included information on the nationalities of the German residents working in Switzerland; for Cantons Basel-Stadt, Zürich, Schaffhausen, Thurgau, St. Gallen and Graubünden, worker figures are projected from the 1942 Swiss Customs figures, based on gains and losses in Canton Aargau.⁵⁸ The principal assumption here is the increases and decreases in worker totals are similar for all cantons.

The war saw a sustained decline in the number of German-resident labourers working in Switzerland. As Figure 6 and Table 4 show, the population of Germans working in the Swiss *Kleine Grenzgebiet* declined from approximately 1 384 to June 1944, reaching an intermediate low of 335; then they rose from 335 to 474 and declined again from about 335 in

57 StAAG BA.09.0596, reports; StAAG BA.09.0692, reports; StAAG BA.09.0693, reports.

58 BAr E6351F/1000-1046/12, letters dated 30 October 1943; BAr E6351F/1000-1046/12, letter dated 10 November 1943.

September 1944 to 112 in June 1945. This represented a total decline of 91% over the war.⁵⁹ Exceeding by nearly two-and-a-half times the wartime reduction in the number of Swiss workers commuting to Germany, it was probably affected by German conscription demands.⁶⁰ The precise Swiss workforce within the ten-kilometre area cannot be estimated for comparative purposes; however, the total number of German labourers commuting to Switzerland in September 1939 represents approximately 0.18% of the workforce within the relevant cantons.⁶¹

Because of a lack of available information, the skills and gender metrics of the German residents working in Switzerland must be estimated. Skill figures from Canton Aargau and other qualitative information allow skill levels for other cantons to be assessed which take into account their geographical differences. For overall estimates for Germans working in the Swiss *Kleine Grenzgebiet*, including earnings, see Appendix B. Considering the cantons overall, these figures indicate approximately 35% of skilled workers, 54% of unskilled and 11% working in agriculture; the war saw little fluctuation in the skill statistics.

These statistics using available skills or gender information are based only on the Aargau *Arbeitsamt* reports. The German residents working in Canton Aargau were mostly unskilled. The weighted wartime average of skilled labour in Canton Aargau was close to 42%, with all but 1% of the remainder consisting of unskilled labour;⁶² this leads to a 40% disparity given the 80% skill level of the countervailing traffic.⁶³

For the other cantons, a skill-gap similar to the one in Aargau has to be assumed. The Basel region and Canton Schaffhausen were important industrial centres which attracted more semi- and higher-skilled German workers than did other areas in Switzerland; the number of skilled workers for these cantons is calculated on the basis of the highest skilled labour rates for Swiss travelling to work in German cities (88%), reduced by the difference in skill levels between the workers commuting to and from Canton Aargau.⁶⁴ This yields approximately equal numbers of skilled and unskilled workers in these cantons.

By contrast, the more rural geography of the *Kleine Grenzgebiet* areas in the cantons of Zürich, Thurgau, and St. Gallen results in a higher

59 See Table 4.

60 BAr E3320B/1000-773/22, reports.

61 As measured from September 1939 to December 1939; Eidgenössisches Statistisches Amt, *op. cit.*, 1941, p. 41.

62 StAAG BA.09.0596, reports; StAAG BA.09.0692, reports; StAAG BA.09.0693, reports.

63 Appendix A.

64 StAAG BA.09.0596, reports; StAAG BA.09.0692, reports; StAAG BA.09.0693, reports.

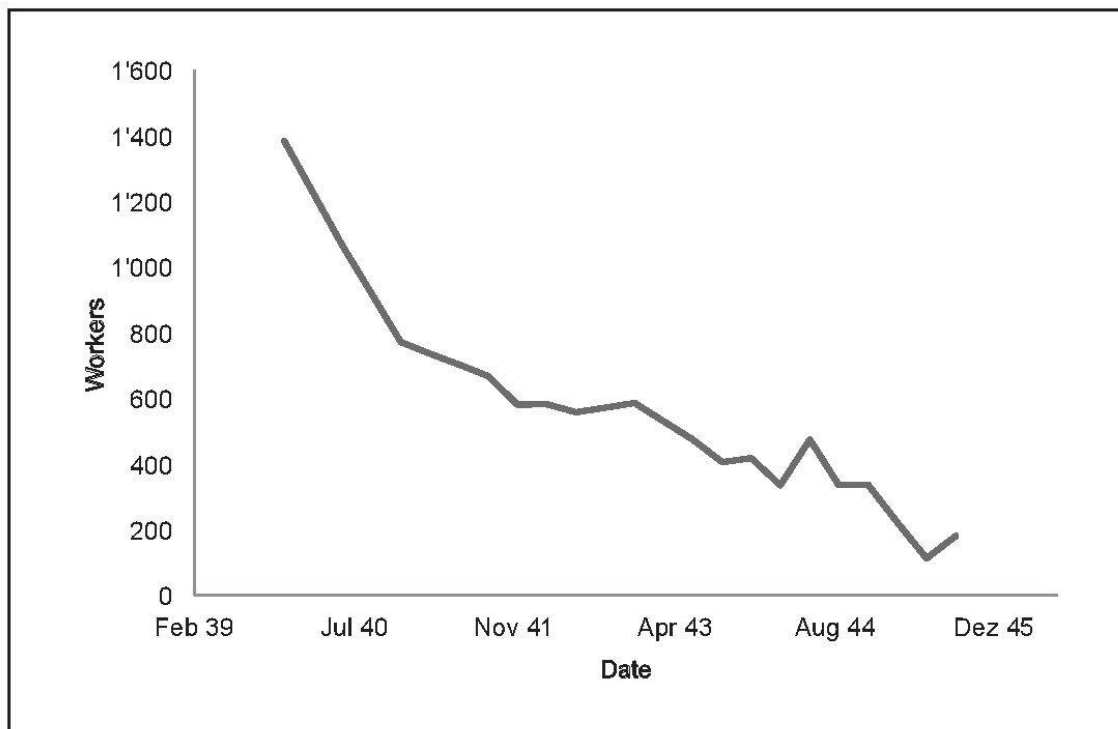


Figure 6. German Transitory Labourers Working in Switzerland, December 1939 to June 1945. Sources: see Table 4.

percentage of agricultural and unskilled workers there. For all three cantons, the German labourers working in the *Kleine Grenzgebiet* zones is estimated to be 20% skilled, 40% unskilled and 40% agricultural, based on examples of labour transfers to an agricultural area, such as Swiss workers from Canton Zürich commuting to Baden; these transfers emerge as 29% skilled, 31% unskilled and 40% agricultural workers. To compensate for the skill differential between German and Swiss workers, the number of skilled workers is adjusted downward by slightly less than one-half; the remainder are assigned to unskilled labour. This results in an estimate for Germans commuting to the more rural cantons of approximately 20% skilled, 40% unskilled and 40% agricultural. Considered together, these cantonal figures yield a combined workforce of 35% skilled, 54% unskilled and 11% agricultural workers in December 1939.

Estimates for the gender distribution of the workers, lacking other qualitative or quantitative information, are based solely on the Canton Aargau example. The gender distribution of German residents working in Canton Aargau favoured women 57% to 43%, using a weighted average of the wartime quarterly figures.⁶⁵ Despite the slightly above-average

65 Ibid.

number of skilled (and therefore male) labourers, the gender figures for Canton Aargau are used as the wartime average. Any other method of estimating the gender figures could be very complex, due to the time-dependent changes resulting from increasing levels of German military conscription. Similarly for the countervailing traffic, amongst the female workers, 35% are estimated to be skilled and 65% unskilled/agricultural. These gender-skill statistics serve to estimate earnings.

The total earnings of Germans working in the *Swiss Kleine Grenzgebiet* were about one-third of their Swiss counterparts in Germany. For comparison, salaries of equivalent average German workers are used.⁶⁶ As reported in Appendix B, gross estimated earnings for German residents working in Switzerland from December 1939 to June 1945 amount to 8.1 million Swiss Francs. This represents a miniscule 0.10% of Swiss 1938 NNI.⁶⁷ As this reveals, net quarterly earnings during the war declined steadily, with the number of workers. Average earnings for the period fluctuated between 569 and 640 Swiss Francs per worker-quarter; average wages reached a peak in March 1941 and declined thereafter.⁶⁸

The Swiss contribution to the German war effort was roughly three times the German contribution to Switzerland. The difference between the expected earnings of the transitory labour groups amounts to just under 16 million Swiss Francs in favour of Switzerland. This indicates that 0.22% of Swiss 1938 NNI went to the Germans as transitory labour.⁶⁹ While this contribution is small, no such contribution was being made to the British or Allied war efforts.

Swiss-German Labour Exchanges and Swiss Wartime Neutrality

At first glance, the quick approval of the 1939 agreement in the days before war started suggests that the Swiss sought to actively provide Germany with labour during the war. However, the statistics showing the limits on the labour supply refute this idea. So do the actions of the local Swiss governments and Federal government departments. From the outbreak of war, Swiss officials sought through various technical procedures to reduce the number of Swiss workers commuting to Germany, including reduced duration and increased costs for border crossing permits and enforcing customs restrictions on cross-border monetary flows, in particular after early 1943. These actions reduced the financial inducements

66 Länderrat des Amerikanischen Besatzungsgebietes, *op. cit.*, p. 470–472.

67 Meier et al., *op. cit.*, p. 409.

68 See Appendix B.

69 Meier et al., *op. cit.*, p. 409.

to work in Germany and accelerated the decline in numbers of Swiss transitory workers. This contradiction suggests that Switzerland was attempting to treat the belligerents more equally than the 1939 agreement initially suggests.

January of Year	Swiss Workers in Baden	Total Workers in Baden	Total German Workers in Baden	Foreign Workers in Baden	Georg Fischer Workers in Singen Plant
1940	109				102
1941	100	100	100	100	100
1942	72	80	78	164	80
1943	63	58	53	292	67
1944	45	63	56	361	61

Table 5. Index of Comparative Labour Trends in Baden (January 1941 = 100).

Trends for Swiss transitory labour behaved like those for German workers in Baden until 1943. As Table 5 demonstrates, between January 1940 and 1943, the number of Swiss transitory workers in Germany and the total number of workers in Baden closely correlate; the number of Swiss workers in Baden declined 15% more slowly over this period than the total workforce in Baden (January 1941 = 100). Some of this difference can be explained by the shortage of skilled labour and the German desire to retain higher-skilled workers, including the Swiss. Thus, although Germany often sought to exploit the area, Swiss transitory workers ultimately left their posts about as often as their German counterparts until 1943.⁷⁰

The relative decline of Swiss workers from 1943–1945 accelerates in comparison to other labour groups in Baden.⁷¹ This relates directly to a second wave of changes in the rules for Swiss authority permits, which encouraged the Swiss to leave their jobs more readily than did their counterparts. Table 5 suggests a 29% decline in the number of Swiss transitory workers from 1943–1944, compared to an increase of 8% in the total number of workers in Baden. The decline in the number of Swiss working in the German *Kleine Grenzgebiet* from 1943 onwards is related to

70 NARA RG242/T-77/243/986448-986453.

71 Peter, *op. cit.*, p. 336.

informal Swiss policy changes, designed to reduce the incentives for working in Germany.

The changes increased the transitory workers' costs and thus lowered their net earnings. The 1939 agreement required identity/permit cards called *Grenzkarte* for all transitory visitors, but allowed each country to regulate these border permits as those chose.⁷² In November 1941, two-year Swiss permits dropped to three-months at most. After mid-1942, the local Swiss authorities charged two Swiss Francs for each permit.⁷³ These changes increased the costs of the original permit by between 8 and 24 times, depending on its duration. At worst, workers could then spend up to 20% of their earnings on permits, as compared to less than 1% before.⁷⁴ These increased costs should have discouraged transitory labour.

The Swiss government started also to enforce its customs allowances strictly. Before the war, workers earning more than ten Reichsmarks (17.5 Swiss Francs) per week were able to supplement the transmission of their cash earnings with consumer goods. Duty-free goods included valuable items such as up to 125 g of sugar, 49 g of coffee, 49 g of chocolate, 49 g of cocoa powder, and various meats.⁷⁵ However, after 1941, increasing shortages in Germany forced all earnings to be remitted in cash. This prevented Swiss workers from remitting all their earnings, which would have exceeded the cash transfer limits.

Unable to use costly consumer goods to transmit their earnings, workers earning more than 17.5 Swiss Francs per working day effectively forfeited some of their pay every week.⁷⁶ An average week's wages of approximately 75 Swiss Francs could have taken five working days to remit;⁷⁷ skilled workers earning above the average (over 100 Swiss Francs a week for a male skilled worker) would have lost part. The Germans tried to increase these cash payment remittance limits, but the Swiss agreed to the changes only for pensioners and travellers, not labourers.⁷⁸ The limitations on remittances and increased costs for the *Grenzkarte* were clearly enough to slowly dissuade these Swiss workers from commuting to work as before.

72 BAr E1070/1000-34/123 agreement dated 9 March 1939.

73 StAZH BEZ/AND/134/2-3.

74 See Appendix B.

75 BAr E1070/1000-34/123, agreement dated 9 March 1939.

76 Ibid; BAr E7160-01/1968-223/249, undated memo marked «Bericht über die Grenzverkehrsverhandlungen mit Deutschland vom 10. bis 13. August».

77 Assumes average quarterly wage of approximately 900 Swiss Francs as suggested by Appendix B.

78 NARA RG242/T-77/152/887810.

Conclusions

Swiss-German exchanges of labour within the *Kleine Grenzgebiet* ultimately benefited the Germans. This study demonstrates a small net outflow of highly-skilled labour from Switzerland to Germany during the Second World War. The Germans provided Switzerland with largely unskilled female labour while Germany gained a disproportionate number of skilled male workers. The net contribution of the worker exchanges over the entire period represents less than 0.28% of Swiss 1938 Net national income (NNI), but its impact on German production for specific wartime specialty items cannot be discounted.⁷⁹ Swiss transitory labour working in German war factories produced critical items: metals, machines and other specialized products. Swiss even-handedness is marked by this one-sided contribution to the German war effort: although very small, the Swiss made the Germans a net contribution three times greater than they received, but no such contribution to the Allies.

However, despite the Swiss government continuing to allow Swiss citizens to contribute by working for the German war effort, the number of Swiss workers commuting to Germany declined faster than the political and economic timeline provided by the *Commission of Independent Experts for the Second World War* and Wylie's *Britain, Switzerland and the Second World War* might suggest they should have.⁸⁰ Clearly economics of commuting to Germany declined much earlier than the traditional political or trade relations might suggest they should have. This is related to Swiss local authorities that sought to restrict worker movements. Rules and restrictions designed to limit worker transfers were enforced; permits became more expensive and worker transfers were restricted by the ability to remit earnings. Consequently, the economic inducement to work in Germany slowly dissipated for most Swiss.

The story of Swiss labour in Germany suggests the Swiss government wanted to maintain favourable relations with Germany by preserving existing interests, while also preventing Germany from gaining large numbers of Swiss workers. The seemingly confusing dual policy of agreeing to and ratifying the new Treaty governing the *Kleine Grenzgebiet* and improving general political relations throughout 1940–1942 while also increasing the costs for Swiss transitory workers in Germany allowed the Swiss government to fulfil these goals.⁸¹ Existing Swiss workers could maintain their employment and transmit their earnings to Switzerland in

79 Appendices A and B; Meier et al., *op. cit.*, p. 409.

80 Wylie, *op. cit.*; Meier et al., *op. cit.*

81 Meier et al., *op. cit.*

cash; however, over the long-term these and other workers would be more likely to take up work at home as comparative employment trends improved. Thus, the Swiss government maintained positive relations with Germany and the illusion that they could provide the thousands of workers needed for the German war effort, all the while restricting worker flows and maintaining their independence.

Appendix A
Estimated Net Earnings of Swiss Residents Working in Germany, December 1939 to June 1945

Date	Total Workers – Switzerland to Germany						Gross Quarterly Earnings Reichsmark	Gross Quarterly Earnings Swiss Francs	Average Earnings per Worker Quarter (Swiss Francs)	German Equivalent Salaries – Reichsmark Per Week			
	Total Workers	Male	Female	Skilled	Un-skilled	Agri-cultural				Male Skilled	Male Unskilled	Female Skilled	Female Unskilled
Dez 39	1'759	82%	18%	70%	15%	14%	916'495	1'603'867	912	48.28	34.73	23.34	23.98
Mrz 40	1'767	83%	17%	71%	15%	14%	973'008	1'702'764	964	51.22	36.09	24.26	24.42
Jun 40	1'737	84%	16%	71%	15%	14%	956'383	1'673'671	964	51.22	36.09	24.26	24.42
Sep 40	1'692	85%	15%	71%	15%	14%	931'500	1'630'126	963	51.22	36.09	24.26	24.42
Dez 40	1'657	86%	14%	71%	15%	15%	917'261	1'605'206	969	51.22	36.09	24.26	24.42
Mrz 41	1'630	86%	14%	71%	15%	15%	977'563	1'710'735	1'050	55.41	39.22	26.09	25.73
Jun 41	1'579	86%	14%	71%	15%	15%	948'328	1'659'575	1'051	55.41	39.22	26.09	25.73
Sep 41	1'458	86%	14%	70%	14%	15%	859'217	1'503'629	1'032	55.41	39.22	26.09	25.73
Dez 41	1'492	86%	14%	70%	16%	14%	887'375	1'552'906	1'041	55.41	39.22	26.09	25.73
Mrz 42	1'358	84%	16%	69%	17%	14%	788'006	1'379'011	1'015	54.44	38.13	25.25	24.85
Jun 42	1'140	82%	18%	68%	17%	15%	659'674	1'154'429	1'013	54.44	38.13	25.25	24.85
Sep 42	1'004	81%	19%	67%	19%	14%	579'457	1'014'049	1'010	54.44	38.13	25.25	24.85
Dez 42	920	79%	21%	66%	20%	14%	528'728	925'275	1'005	54.44	38.13	25.25	24.85
Mrz 43	954	81%	19%	62%	25%	14%	546'997	957'245	1'004	55.11	39.05	24.6	23.13
Jun 43	1'001	83%	17%	58%	29%	13%	565'810	990'167	989	55.11	39.05	24.6	23.13
Sep 43	925	84%	16%	58%	28%	14%	524'349	917'611	992	55.11	39.05	24.6	23.13
Dez 43	783	85%	15%	61%	26%	14%	447'339	782'842	1'000	55.11	39.05	24.6	23.13
Mrz 44	764	86%	14%	64%	22%	14%	442'173	773'803	1'013	55.13	39.41	23.74	22.07
Jun 44	716	86%	14%	69%	19%	13%	421'245	737'179	1'029	55.13	39.41	23.74	22.07
Sep 44	723	87%	13%	64%	22%	14%	419'157	733'524	1'015	55.13	39.41	23.74	22.07
Dez 44	658	87%	13%	61%	24%	14%	377'568	660'744	1'004	55.13	39.41	23.74	22.07
Mrz 45	616	89%	11%	68%	17%	15%	361'045	631'830	1'026	55.13	39.41	23.74	22.07
Jun 45	563	91%	9%	74%	10%	16%	337'370	590'398	1'048	55.13	39.41	23.74	22.07
TOTAL								26'890'585					

Sources:

See text. Salaries assumed to follow German standards from Länderrate des Amerikanischen Besatzungsgebiets. *Statistisches Handbuch von Deutschland, 1928–1944*, München 1949, S. 470–472.

Notes:

To account for different gender distributions within the skill levels, only 10% of women are assumed to be skilled, the remainder as unskilled (57%) and agricultural labour (33%) as per Canton Aargau statistics and as discussed in the text.

Appendix B

Estimated Net Earnings of German Residents Working in Switzerland, December 1939 to June 1945

Date	Total Workers – Germany to Switzerland						Gross Quarterly Earnings Reichsmark	Gross Quarterly Earnings Swiss Francs	Average Earnings per Worker Quarter (Swiss Francs)	German Equivalent Salaries – Reichsmark				
	Total Workers	Male	Female	Skilled	Un-skilled	Agri-cultural				Per Week				
										Male Skilled	Male Unskilled	Female Skilled	Female Unskilled	
Dez 39	1'384	43%	57%	35%	54%	11%	450'034	787'559	569	48.28	34.73	23.34	23.98	
Mrz 40	1'225	43%	57%	35%	54%	11%	415'181	726'566	593	51.22	36.09	24.26	24.42	
Jun 40	1'065	43%	57%	35%	54%	11%	361'195	632'092	593	51.22	36.09	24.26	24.42	
Sep 40	919	43%	57%	35%	54%	11%	311'751	545'565	594	51.22	36.09	24.26	24.42	
Dez 40	772	43%	57%	34%	54%	12%	262'377	459'159	595	51.22	36.09	24.26	24.42	
Mrz 41	736	43%	57%	35%	54%	12%	268'959	470'678	640	55.41	39.22	26.09	25.73	
Jun 41	702	43%	57%	35%	54%	12%	256'259	448'453	639	55.41	39.22	26.09	25.73	
Sep 41	667	43%	57%	35%	54%	11%	243'549	426'211	639	55.41	39.22	26.09	25.73	
Dez 41	581	43%	57%	35%	54%	12%	212'173	371'303	639	55.41	39.22	26.09	25.73	
Mrz 42	583	43%	57%	35%	54%	10%	206'321	361'061	620	54.44	38.13	25.25	24.85	
Jun 42	558	43%	57%	36%	55%	9%	196'744	344'302	617	54.44	38.13	25.25	24.85	
Sep 42	572	43%	57%	36%	55%	9%	201'647	352'882	617	54.44	38.13	25.25	24.85	
Dez 42	586	43%	57%	36%	55%	9%	206'549	361'460	617	54.44	38.13	25.25	24.85	
Mrz 43	530	43%	57%	36%	55%	9%	185'941	325'397	614	55.11	39.05	24.6	23.13	
Jun 43	474	43%	57%	36%	55%	9%	166'460	291'305	614	55.11	39.05	24.6	23.13	
Sep 43	405	43%	57%	36%	55%	9%	141'923	248'365	614	55.11	39.05	24.6	23.13	
Dez 43	419	43%	57%	36%	55%	9%	146'757	256'824	614	55.11	39.05	24.6	23.13	
Mrz 44	335	43%	57%	36%	55%	9%	116'217	203'379	607	55.13	39.41	23.74	22.07	
Jun 44	474	43%	57%	36%	55%	9%	164'618	288'081	607	55.13	39.41	23.74	22.07	
Sep 44	335	43%	57%	36%	55%	9%	116'187	203'327	607	55.13	39.41	23.74	22.07	
Dez 44	335	43%	57%	36%	55%	9%	116'173	203'303	607	55.13	39.41	23.74	22.07	
Mrz 45	223	43%	57%	36%	55%	9%	77'506	135'635	608	55.13	39.41	23.74	22.07	
Jun 45	112	43%	57%	35%	56%	9%	38'781	67'867	608	55.13	39.41	23.74	22.07	
TOTAL								8'510'773						

Sources:

See text. Salaries assumed to follow German standards from Länderrate des Amerikanischen Besatzungsgebiets. *Statistisches Handbuch von Deutschland, 1928–1944*, München 1949, S. 470–472.

BAr E6351F/1000-1046/12, letter marked «D.III. No. 185/15.3», from *Eidgenössische Oberzolldirektion* to *Zolldirektion Schaffhausen* dated 30 October 1943; BAr E6351F/1000-1046/12, letter marked «No. 185/30.1», from *Eidgenössische Oberzolldirektion* to *Zolldirektion Basel*, dated 30 October 1943; BAr E6351F/1000-1046/12, letter marked «D.III. No. 185/8.1», from *Eidgenössische Oberzolldirektion* to *Zolldirektion Chur*, dated 10 November 1943. StAAG BA.09.0596, «*Arbeitsbewilligung für den täglichen Grenzverkehr*» [Daily Workers in Frontier Traffic], 7 July 1938 to 12 December 1938; StAAG BA.09.0692, «*Arbeitsbewilligung für den täglichen Grenzverkehr*», 22 December to 14 December 1943; StAAG BA.09.0693, «*Arbeitsbewilligung für den täglichen Grenzverkehr*», 14 July 1944 to 19 July 1946.

Notes:

To account for different gender distributions within the skill levels, 35% of women are assumed to be skilled, the remainder as unskilled and agricultural labour as per Canton Aargau statistics. See discussion in the text.