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MODERNIZATION WITHOUT URBANIZATION or Switzerland as a model of job development outside large urban areas

Gardner Clark

Cornell University, Ithaca, New York

ZUSAMMENFASSUNG

Dieser Artikel analysiert, warum die Schweiz als eines der ökonomisch höchstentwickelten Länder der Erde in einer Hinsicht nicht denselben Weg der Modernisierung eingeschlagen hat wie andere, vergleichbare europäische und aussereuropäische Nationen : in der Urbanisierungsrate.

Die Begründung für die Tatsache, dass die Schweiz das moderne Land mit der geringsten Verstädterung ist, findet der Autor darin, dass schon in den Anfängen der Industrialisierung – bedingt durch den Föderalismus und die lokale Selbstverwaltung und Eigeninitiative – grösster Wert auf die Entwicklung differenzierter Beschäftigungsmöglichkeiten in Kleinstädten und Dörfern gelegt wurde. Damit wurde die Abwanderung der Landbevölkerung und deren Zusammenballung in Metropolen verhindert.

Diese Politik, die auch heute noch wirksam ist, kann zugleich als Beweis dafür gelten, dass sich Dezentralisierung und geographische Immobilität der Arbeitskräfte nicht zwangsläufig als Wachstumshindernis niederschlagen.

RESUME

Cet article analyse pourquoi la Suisse, l'un des pays du Globe les plus développés économiquement parlant, n'a, en un certain sens, pas suivi la même voie vers la modernisation que les autres nations européennes et extra-européennes qui lui sont comparables : celle du taux d'urbanisation.

L'auteur pense que si la Suisse est le pays moderne comportant la plus faible urbanisation, c'est parce que, dès les débuts de l'industrialisation, on a attribué – motivé par le fédéralisme et par l'autonomie administrative et les initiatives locales – la plus grande importance à la diversification des possibilités d'emploi dans les petites villes et dans les villages. C'est ainsi que l'émigration des populations rurales et leur concentration dans les métropoles a pu être évitée. Cette politique, qui est encore en vigueur actuellement, peut en même temps fournir la preuve que la décentralisation et l'immobilité géographique de la main-d'oeuvre ne représentent pas nécessairement un obstacle au développement d'un pays.

1. INTRODUCTION

Urbanization is one aspect of modernization. This study tries to explain how Switzerland has been able to minimize urbanization in the process of modernization, how while attaining the world's highest per capita income, this country has managed to keep three quarters of her population living in communities smaller than Ithaca, New York. Switzerland has been for decades high on the list when countries are measured by other dimensions of socio-economic development, such as railroad mileage, highway vehicles, energy production, telephones, book production, and number of physicians per capita. Why does Switzerland, nevertheless, remain the least urbanized modern country? (Banks, 1971).

1.1. Relative Lack of Urbanization in Switzerland

Less than one third of the Swiss live in cities with more than 20,000 inhabitants. By this measure the only European countries less urbanized than Switzerland are Yugoslavia, Rumania, and Portugal (see Table 1). Only five Swiss cities exceed 100,000, and with a total population of 6.2 million, Switzerland has no city as large as Nashville, Tennessee. Furthermore, Swiss cities have smaller suburbs than cities in many other modern countries, so that Swiss cities are comparatively smaller when measured as "urban agglomerations". Switzerland is densely populated, but no more so than the rest of Western Europe¹.

When workers in developing countries abandon agriculture a high proportion of them or their descendants end up in cities. When European countries were at an earlier stage in their economic development their ex-farmers were more likely to move into cities than they have been more recently (Davis, Golden, 1954, p. 8; Sovani, 1964, p. 115-116; Schnore, 1961, p. 229). The Swiss are the outstanding exception to these tendencies both earlier and more recently. In the later stages of modernization, when the vast majority of the population of highly industrialized countries lives in urban centers, urbanization slows, comes to a halt and even begins to decline (Hill, 1974, p. 232). We would like to find out why this slowdown occurred in Switzerland while her metropolitan centers were still small². Many underdeveloped countries are trying desperately to stem the tide of migration from rural areas to large cities. They might like to find out how the Swiss from the beginning of modernization have managed to stem the tide. Switzerland was the least urbanized industrial country in Western Europe a century ago as she is today³.

¹ See Thompson, 1965, pp. 124-12, and United Nations, 1960, pp. 346-368; 1970, pp. 482-503 and 1973, pp. 194-224. Only 30.1 percent of the Swiss were living in cities of 20 000 or more in 1960, which placed Switzerland thirty-third in Thompson's worldwide list of 52 countries.

² Kingsley Davis observed a slowing in the rate of urbanization as countries reached advanced stages of industrialization and modernization. Using as his index the proportion of people living in cities of 100 000 or larger, he notes "As the proportion climbs above 50 percent the curve begins to flatten out; it falters, or even declines, when the proportion urban has reached about 75 percent" (1965, p. 44). This is understandable when a high proportion of a country's population lives in large cities, but the drop occurred in Switzerland when the proportion of people living in cities of 100 000 or larger reached a maximum of 20.7 percent in 1950, declining to 20.4 percent in 1960 and 17.7 percent in 1970 (see Table 2).

³ Around 1820 only one percent of the Swiss lived in cities over 20 000, which placed her next to the bottom of the list of countries for which we have estimates. By mid-century the Swiss figure had risen to 4 percent, which still left her low on this totem pole. Furthermore, Switzerland was the only country in all of Western Europe in 1890 with no city larger than 100 000. In eastern Europe the only countries in 1890 with no city larger than 100 000 were Serbia, Bosnia and Bulgaria. See Weber, 1953, pp. 144-145; and Kuznets, pp. 82-95.

1.2. Methodology

The Swiss are geographically immobile⁴. They are reluctant to move unless necessary to find suitable employment. At the same time they do not commute long distances from residence to work. Consequently the pattern of employment is the primary determinant of where the Swiss live⁵. Therefore, in trying to explain the lack of urbanization in Switzerland this study focuses on the location of employment. We examine the decline of farm employment and what the Swiss government has done to slow the decline and keep farmers on the land. We also look at the development of nonfarm jobs in the tourist sector, much of which is located in small towns and rural areas. (The development of other service sectors is concentrated primarily in the larger urban areas). The main source of nonfarm employment is manufacturing, whose structure, scale and location tells us much about Swiss urbanization. Finally, local and cantonal governments by means of taxes, subsidies, and other incentives, have done a lot to influence the location and development of nonfarm employment, thus affecting the pattern of urbanization. We find that the geographical location of Swiss manufacturing and service establishments providing the bulk of employment is not apt to be strongly influenced by the location of the markets for the outputs of these establishments. A very high proportion of Swiss manufactures are exported, and their domestic sales are generally nationwide. The same is true of the leading Swiss services: banking, insurance, and tourism, which cater to nationwide or international clientele. Furthermore, their raw materials inputs are not bulky and heavy, but light and valuable, requiring relatively little transport per unit of output. Most Swiss employers, therefore, are relatively footloose and can locate where their major inputs, particularly labor, land, public and private services, are high quality and inexpensive. We show that Swiss employers can find the required labor, land, and services in remarkably small sized cities and towns⁶. Furthermore, we find that the footloose nature of most Swiss employers makes them particularly responsive to subsidies, tax concessions, and other government programs designed to encourage decentralization.

⁴In 1960 69 percent of the Swiss were living in the canton in which they were born and 42 percent in the community of their birth. See Steinberg, 1976, pp. 181-182. For the historical and cultural roots of this phenomenon see especially pp. 98-128.

⁵On geographical labor immobility see, for example, Frey, 1976, p. 298; Piveteau, 1969, pp. 435-461.

⁶Of course the urban market has to be large enough to make it profitable to provide various business and consumer services, but we shall find that the threshold market size required for various city services to be provided efficiently in Switzerland is much smaller than American analysts seem to think necessary. See Nourse, 1978, pp. 543-549. The least cost approach is more applicable than the market area approach to the analysis of Swiss industrial location. An analytical model developed by Smith is useful in thinking about Swiss industrial location. See Smith, 1966, pp. 95-113. On the shortcomings of central place theory for explaining the size distributions of cities and towns in manufacturing areas see Evans, 1972, p. 50. For comparative cost data see Dawson, 1977, pp. 93-96.

2. EMPLOYMENT PATTERNS AND URBANIZATION

Fortunately for our purposes much of the Swiss census data are organized by size of community⁷. Analysis of employment patterns tells us much about why or “how come” Switzerland has been able to modernize with minimum urbanization. Of course, we find that the larger the community the smaller the share of farmers in the workforce, and in Switzerland as everywhere else the share of farm labor in the total labor force declined with modernization, contributing to urbanization. However, farm exodus took place more slowly than might have been expected. Switzerland has mediocre to poor soil and difficult topography compared to agriculture in many neighboring countries and other parts of the world. Had world market forces been allowed their full impact the Swiss agricultural population certainly would not have *increased* in absolute numbers from 489 thousand to 574 thousand between 1888 and 1941, and the drop since 1945 would have been even more precipitous than it was (Eidg. Volkszählung 1970, Band 5, pp. 313-314). The slow exodus is attributable to Swiss government policy that encouraged farmers to remain on the land and out of the cities (see below). Our basic question, nevertheless, is why as Swiss farmers left the land they did not as everywhere else crowd into big cities? As farmers left agriculture an extraordinarily high proportion of nonfarm jobs were created outside urban centers, predominantly in the industrial sector. Industry’s share of total employment (48.3 percent in 1976) has remained 40 percent or above for a century. Despite its picture postcard image, Switzerland, with almost half of its labor force in manufacturing and construction, is probably the most highly industrialized country in the world, and Swiss industry is located primarily in small cities and towns.

Service employment grew rapidly in the twentieth century, particularly after 1950. Switzerland’s middle-sized cities and her one fairly large city are overwhelmingly service-oriented (see below). The pattern of employment in the services is crucial to understanding the absence of large cities and the vitality of very small communities. According to the last two population censuses, the distribution of employment among the three sectors was as follows⁸ :

	1960	1970
Sector 1 (Agriculture)	13.2	7.6
Sector 2 (Manufacturing and construction)	48.4	48.3
Sector 3 (Services)	38.4	44.1

A large establishment with thousands of employees is constrained to locate in or near an urban labor market, but a small or medium-sized enterprise can lo-

⁷ See Eidg. Statistisches Amt, 1975, Band 4, pp. 178-311. The Federal Bureau of Statistics very generously gave me a wealth of data from the 1975 industrial census which is organized by size of community. The data consists of hundreds of pages of unpublished statistical tables, which I have used in my analysis and from which I have abstracted material.

⁸ See Eidg. Volkszählung, 1970, Band 12, p. 97. The population census follows the procedure recommended by the United Nations, including in the labor force anyone over age 12 who works more than six hours a week. Thus, the above percentages are

cate in either a large or small community. The average Swiss nonfarm establishment has only nine workers (Table 6). Only 84 establishments in Switzerland have more than 1 000 employees and 55 percent of the nonfarm labor force work in establishments with less than 50 employees. Swiss establishments can recruit their labor in large or small communities all over the country. The predominantly small size of Swiss establishments makes possible the low degree of urbanization.

Furthermore, Switzerland's excellent transport and communications system facilitates the decentralization of small manufacturing. She has more railroad lines per square mile than any other country except Belgium, more telephones per capita than any but the U.S.A. and Sweden, and probably the world's fastest postal service. Thus a plant in the most remote mountain community can telephone for a spare part and have it delivered the next day.

Very small plants form the backbone of employment in very small communities, and no large plants with over 500 employees are located in communities with fewer than 1 000 inhabitants. The average number of workers per establishment increases steadily with the size of the community (Table 5).

The most important reason why Swiss nonfarm workers do not crowd into large urban areas is that the dominant manufacturing sector is concentrated overwhelmingly in small cities and towns. Two out of three Swiss manufacturing employees work in communities with less than 20 000 inhabitants and three out of four work in communities smaller than 100 000. It is even more surprising to find that small cities and towns have more than their share of large manufacturing plants. Almost two thirds of the very largest plants are found in small cities from 5 000 to 99 000 in size.

Manufacturing plants generally employ two or three times as many persons as service establishments (Table 6). This is because internal costs in manufacturing are often lower in larger plants, but this is less true in the services. The internal economies of scale in service establishments are more limited than in factories due to the increasing difficulties of supervision as the number of service employees increases. At the same time, service industries are more subject to external economies of scale as the number of establishments and the size of the community increases. Therefore, we note that in general the larger the community the larger the proportion of services and the smaller the proportion of manufacturing in total

valid for international comparisons. However, this procedure adds in the neighborhood of 40'000 more to the labor force compared to the definitions for the industrial census data which we rely on. The industrial census indicates a lower share of the labor force in industry and higher share in the services. The discrepancy is partly due to the fact that the industrial census data we use includes only persons who work 30 or more hours a week. Furthermore, the industrial census in 1975 redefined certain categories, particularly public employment in such a way as to shift many employees from industrial to service categories. All this is partly responsible for the industrial census showing a nominal decrease in manufacturing from 43.5 to 37.6 percent of nonfarm labor force between 1965 and 1975. The effect was to decrease the share of industry and construction in the industrial census from 56.2 to 47.8 percent between 1965 and 1975. West Germany is the next most industrialized country.

employment (Table 4). On the other hand, Swiss service-oriented cities are very modest in size by world standards. Swiss cities like Zurich and Geneva provide services in many ways as complete and sophisticated as those of New York and London, but in urban areas with populations only one twentieth or one fiftieth the size of their American and British rivals.

What can we infer from the 1975 employment patterns for the country as a whole about how the Swiss have minimized urbanization in the process of modernisation⁹ ?

Switzerland's largest 2-digit industry is machinery and vehicles, which employs 10 percent of the nonfarm labor force. Within this category textile machinery and machine tools are distinguished by their high quality and specialization (Bureau fédéral de statistique, 1975a, p. 60-63). The electronic and electrotechnical branches concentrate on high quality, complex apparatus requiring entrepreneurial know-how and highly skilled labor. Conspicuous is the complete absence of big plants assembling household appliances and radio-TV sets, which in other countries have to draw on concentrated labor markets, providing masses of easily-trained, semiskilled labor. The construction of vehicles is next to the smallest 3-digit machine building sector. Almost as many Swiss make elevators and escalators as make automobiles and auto bodies. More make funiculars and ski-lifts than airplanes or boats or bicycles and motorcycles. The Swiss manufacture almost no ships, automobiles, aircraft, motorcycles and bicycles, which in other economies are usually large-scale, requiring large urban labor markets. Switzerland has no large cities like Torino, Genoa, Detroit, Seattle, or Glasgow, dominated by enormous plants making such vehicles. Another factor inhibiting urbanization in Switzerland has been the absence of seaports, which as points of transshipment between sea and land transport often become focal points for the growth of large cities.

Switzerland produces no pig iron, and employs relatively few workers in the production of steel ingots, rolled products, and iron and steel castings (class 341). Basic steel plants require both enormous investment and many thousands of workers but more important, they attract great numbers of satellite plants providing machinery and services, finishing and fabricating iron and steel products. Switzerland, therefore, lacks urban areas like Pittsburgh, Cleveland, South Chicago, Birmingham, the Ruhr, Magnitogorsk, Kuznetsk, and so forth. The lack of coal and iron ore has not prevented several countries such as Japan, Italy, the Netherlands, and Taiwan from developing their own iron and steel smelters, but the lack of these raw materials did discourage the development of this basic heavy industry in Switzerland and is generally considered an important factor limiting Swiss urbanization. Similarly, Switzerland concentrates on the manufacture of finished chemical products rather than basic chemicals (class 31).

⁹The data on which the following discussion is based appear in Table 6 or are taken from the Bureau fédéral de statistique, 1975, Vol. 1, pp. 88-121.

The steady growth of machinery, metallurgy, and metal working, chemical manufacture, hotels and restaurants, banks and insurance have provided the bulk of nonfarm employment since 1939 (Table 3). At the same time the sharp ups and downs of food processing, furniture manufacture, watchmaking, clothing and textiles indicate that competitive market forces are permitted to take their toll in individual industries and workplaces. Job security is provided for Swiss workers not by desperate efforts to keep bankrupt establishments afloat, as in neighboring Italy, but by doing away with unemployment. Unemployment has remained a fraction of one percent of the labor force since 1950.

Switzerland is generally believed to be a nation of bankers, and banking is a growing sector, but the 1975 industrial census shows that banking and credit provide only 2.8 percent of her nonfarm employment. Even in the middle-sized cities, where banking plays its most important role, its share of employment is only 5.7 percent.

Generally, Swiss communities wishing to increase local job opportunities go after "leaders" who in turn attract other employers to the community, and in particular they go after small and medium-sized manufacturing plants. Small plants usually produce a narrow range of special products, and, therefore, maintain close links with neighboring establishments for those supplies and services they cannot provide themselves. Large manufacturing establishments, on the other hand, provide themselves with many services which could be purchased from local suppliers, and for their remaining needs tend to buy from large suppliers some distance away¹⁰.

The Swiss census presents its data in nine separate size categories of communities. The most important prototype consists of all communities with between 10 and 20 thousand inhabitants. The employment patterns in these small cities are remarkably similar to those of the country as a whole, but they differ in some important respects (Table 7)¹¹.

Some small cities are suburbs of larger cities, but the largest contingent are manufacturing cities spread across the northern Swiss plateau. They are in no sense an undifferentiated mass of urban areas, one flowing into another like big American urban agglomerations. Yet they are close enough to each other that

¹⁰ Kipnis, 1977, p. 299 and Chinitz, 1961, pp. 288-289, also found that very large firms provide their own specialized services such as advertising, legal assistance, accounting and transport, and thus have less of a multiplier effect in attracting new firms to the community.

¹¹ The rank order of the first five and the last three leading employers in small cities is identical with the country as a whole. The middle ranks from six to twelve differ, but not drastically. When we list those employers more important in small cities than elsewhere (Table 9) we find only two of significance. Machinery and vehicles have increased its share of nonfarm employment to 14.4 percent compared to 10.0 in the country as a whole and only 6.0 percent in small villages. Chemicals are somewhat more important in small cities (3.3 compared to 2.7 and 1.6). Plastic, rubber and leather products, which have less than one percent of the employment in the country as a whole and are, therefore, not included in Table 7, provide 1.3 percent of the nonfarm jobs in small cities.

shipments can be made rapidly from one to another. They are provided with a dense railroad and highway network criss-crossing the central plateau, as well as a very efficient telephone and postal communications network. They thus have developed an efficient network of mutual supply with concomitant external economies.

Furthermore, these small Swiss cities are themselves well-provided with the infrastructure and support services for manufacturing that in other countries are normally found only in much larger cities. Banks and insurance provide services needed in small cities by modern manufacturing. Hence banks and insurance are more important than their miniscule percent of employment in small villages, but much less than the leading role that banks and insurance occupy in cities from 100 to 200 thousand (Table 6). Wholesale and retail trade are much more important in small cities than they are in small villages and in the country as a whole. The leading industries in small cities require more transport per unit of output than the dominant industries in small villages. This is reflected in the correspondingly much greater share of transport and shipping services in total employment in small cities compared to the small villages and to the country at large. The small-city hotel and restaurant business is small, serving primarily manufacturing clientele. The share of consultants and business services in small cities matches their share of manufacturing employment. The small cities likewise have their full share of other services including real estate and rentals, cleaning, repair services. The data thus bear out a frequent observation of travelers that small cities and towns in Switzerland provide consumer services and amenities which in neighbouring countries like France and Italy can be found only in large urban areas.

We are surprised to find that manufacturing plants are larger in small cities than they are elsewhere (Table 6). These small cities with only 10 to 20 thousand inhabitants developed an efficient network of suppliers, the infrastructure and support services for manufacturing that in other countries are normally found only in much larger cities. The small cities cannot offer the full range of services and external economies required to service international banking or to become national cultural or government centers, but they do provide the infrastructure, external economies and services, and labor markets required to support the full range of modern Swiss manufacturing. Most manufacturing workers and employers seem to be satisfied with good primary and secondary education and recreational facilities, especially sports. They apparently can get along without big city services like opera, museums, universities, and sophisticated business services required by banks, insurance, and big government. Consequently, no Swiss manufacturer is constrained to locate in or on the edge of a large urban agglomeration. This ability of Swiss manufacturers to prosper in small cities and towns probably is the most important single explanation of why seventy percent of the Swiss population lives in communities with fewer than 20 000 inhabitants.

Our second prototype is the smallest class of communities with less than 1 000 inhabitants. The 1975 census data can help us to understand how and why so many former farmers have been able to stay in their tiny rural communities

when they left the land. What characterizes the job opportunities that permit non-farmers to live and prosper in such small communities? First we note that these villages are too small to provide enough workers to man the largest establishments. Small employers predominate. The average nonfarm workplace is only half as large as the country's already small average. The smallest workplaces provide an inordinate large share of village jobs (Tables 5, 6, and 7).

Why types of nonfarm jobs are held by the workers in communities with less than 1 000 inhabitants? One might expect that the service sector would predominate in view of its leading role in modern economies, and in view of the importance of Switzerland's alpine tourism. In fact, however, the secondary sector (manufacturing and construction) predominates with over half of the nonfarm jobs (Table 6).

The employment patterns in the class of small cities with 10 to 20 thousand inhabitants are very similar to the patterns in Switzerland as a whole. In communities smaller than 1 000, however, there is a drastic rearrangement of the ranks of the largest leading employers compared to the country as a whole (Table 7). Building and construction moves from second place in Switzerland as a whole to first place in the villages, and sharply increases its share of total employment, and several other industries depend on construction activity, so that about one quarter of the village labor force is employed in or dependent on building and construction. Metallurgy and metalworking has the same rank in the villages as it has nationally (third in both cases).¹² The manufacture of furniture and wood products is primarily a small-town activity. Most of the woodworkers are engaged in making household furniture and cabinets. Stoneware and ceramics is, like the manufacture of both metal and wood products for installation in buildings, an appendage of the leading industry in small communities, namely, building and construction.

Machine and vehicle manufacture is fifth among the leading employers in small communities, and includes textile machinery, machine tools, office and printing machinery, pumps, farm machinery, construction machinery, steam engines, automatic packing and sorting machines, sausage makers, automatic door openers, electronic measuring and control devices, radio, telephone and recording equipment and so forth. We are struck by the enormous variety of specialized machinery produced in Switzerland in general and in small towns in particular.

Food processing and beverages are more concentrated in villages and rural areas to be near their agricultural suppliers. Watchmaking is also more important in villages than elsewhere, but watchmaking is no longer a household industry even in the smallest communities. Both textiles and clothing manufacturers are declining industries that are considerably more important in small towns than else-

¹² Use of the detailed unpublished statistical data supplied by the Eidg. Statistisches Amt was facilitated by their *Allgemeine Systematik der Wirtschaftszweige*, Bern, 1975, 222 pp. as well as the French language edition. Throughout this paper the source of information about employment patterns by community size is unpublished Table No. 1.02 from the *Eidgenössische Betriebszählung 1975*.

where. Watchmaking, textiles and clothing historically originated in rural communities and are more apt to be found there today.

Hotels and restaurants, fourth-ranked nationally, moves up to become a close second to the building industry, employing 13.2 percent of the nonfarm labor force in the smallest communities. This is more than twice their share in the national labor force. Hotels and restaurants are the best index of the much larger tourist industry, which does not appear separately in the census data. This underlines the key role of the tourist industry in villages and rural areas. Public administration, defense and social security employ a much smaller share than they do in the rest of the country, and government offices in the villages are much smaller than elsewhere¹³.

The most striking characteristic of all of the types of employment more important in small towns than elsewhere is their lack of capital intensity (Table 8). It takes much less capital to create a small-town job, and investments are apt to be more risky than in larger urban communities. Furthermore, capital and entrepreneurial talent are usually less available in small, rural communities. The other side of the coin is that the village industries and services are all very labor intensive. They require relatively little formal education and the required skills can be learned quickly in most cases. The leading industries in small towns require less capital, less sophisticated entrepreneurial talent, less highly trained labor, and also less of several types of services. The important leading employers in small towns have very modest demands for the services of banks, insurance companies, consultants, commercial services, real estate agents, equipment rental, scientific and technical research. The materials they utilize and the finished products they ship generally require simpler and less expensive inputs of transportation services per unit output than the other leading industries. Their workers have more modest requirements for retail trade and consumer services¹⁴.

Our third prototype consists of cities with between 100 and 200 thousand inhabitants, namely :

Geneva	173 618
Bern	162 405
Lausanne	137 383
Total	473 406

Each of them is large by Swiss standards (only two cities, Basel and Zurich, are larger), but none of them is as large as Syracuse, New York, with a city population of 197 208 and agglomeration of 636 507. The average manufacturing plant with 13.2 workers is smaller than the Swiss average, and much smaller than the average in small cities (Table 5). Service establishments, however, are much larger

¹³Table 8 calls our attention to the category "other industries" which are too small to be considered individually throughout the analysis, but taken collectively they provide appreciable employment in small towns and little elsewhere.

¹⁴This is born out by the data covering all 2-digit classes, not presented here.

than elsewhere. Whereas villages and small cities stress manufacturing and construction, the middle-sized cities lean way over to the side of services. Less than 20 percent of their labor force is in manufacturing and an overwhelming 72.1 percent in the services (compared to 44 percent for the country as a whole). Most manufacturing industries become insignificant. The only manufacturing industry more important in middle-sized cities than elsewhere is printing.

Banks and insurance with 8.2 percent of employment become the number one leading industry in middle-sized cities¹⁵. Banks and insurance companies, providing services above the local level to national and international clientele, benefit very much from infrastructure, services and external economies that can best be provided in an urban environment. Such services include post, telephone, and communications; rapid and reliable passenger and delivery services by air, highway, and railroad; consultants and business services; printing; accounting and business machines; real estate and property management; research facilities, and various kinds of publications. Public administration at the regional, national, and international level depends on the same service facilities.

Public administration is a close second to banking as a leading employer in the middle-sized cities (Table 10). Bern, which is both the federal and a cantonal capitol, nevertheless, has only 8 thousand persons engaged in public administration. They would fit comfortably into any of a number of federal office buildings in Washington, D.C., whereas the 319 military and civilian personnel running the military and civil defense establishments in Bern could scarcely man the custodial posts in the Pentagon.

The small size of the Swiss national capitol reflects the relative unimportance of the federal compared to the cantonal and local governments and also the small size of the country. It is commonly assumed that Swiss cities are small because the country is small. The assumption cannot be taken for granted, however, when we realize that all the other small modern countries such as the Netherlands, Denmark, Austria and Sweden, are more urbanized than Switzerland. The other small modern countries are also more urbanized than a number of large modern countries. The small size of the public administration in Bern is one of the rare cases where we have found a clear connection between the small size of the country and the small proportion of its population living in large cities. (Furthermore, in terms of population Switzerland is relatively large. In 1978 89 countries were smaller and only 73 larger than Switzerland (See Population Reference Bureau, 1978).

¹⁵ Bank and insurance personnel as a percentage of the labor force in the Swiss cities with over 100 000 inhabitants is as follows :

<i>City</i>	<i>Population</i>	<i>% of labor force</i>
Geneva	173 618	11.6
Zurich	422 640	10.4
Lausanne	137 383	8.0
Basel	212 857	6.8
Bern	162 405	4.9

Medicine and health care is more evenly distributed throughout Switzerland than in many other countries, but in Switzerland, as elsewhere, the better hospitals and specialized medical facilities tend to be located in the larger cities. Primary and secondary education is distributed evenly throughout the country, but higher education is concentrated in the larger cities (Table 10).

Professional consultants and firms providing various specialized business services are very large employers in the middle-sized Swiss cities where they find the information, libraries, and research facilities they require, as well as communication and travel facilities for the use of their personnel. They are like banks and public administration in this respect¹⁶.

Switzerland demonstrates that middle-sized cities can prosper without a strong manufacturing base, and furthermore that a country need not have large cities in order to provide all types of sophisticated, high quality services for the most demanding international business and governmental organizations. A complete range of services can be provided efficiently in cities of very modest size.

Switzerland has only two cities with over 200 000 inhabitants, namely, Basel with 213 thousand and Zurich with 423 thousand. Their employment patterns differ from the middle-sized cities primarily in having a bigger share in manufacturing, namely 28 percent instead of 20 percent. Zurich with 69 percent of her labor force in the tertiary sector is almost as concentrated in the services as the three cities in the 100 to 200 thousand size class¹⁷. However, Zurich's machinery and vehicle industry does provide substantial employment and a big share of its workers (48 percent) work in large plants with over 1 000 employees.

In analyzing urban problems the Swiss recently have been paying more attention to agglomerations, which not only include the political unit of the city itself, but also surrounding communes that are considered to be part of the city's urban area. Agglomerations, of course, considerably increase the size of the urban

¹⁶ The large sub-group, legal, economic, and commercial services, employs over half of the 19 000 workers in class 88. Employment in the sub-groups is as follows :

Classification

881/882	Legal, economic, and commercial	9 700
883	Architectural and building engineering	5 923
884	Professional organizations and interest groups	3 377
	Total consultants and business services	19 000

¹⁷ Zurich's largest employers (down to the 5 percent level) are as follows (with the percentage each has of the total employment) :

<i>Rank</i>	<i>Class</i>	<i>Name</i>	<i>% of employment</i>
1	64-65	Retail trade	10.8
2	66	Banking and insurance	10.4
3	35	Machinery and vehicles	9.2
4	61-62	Wholesale trade	8.4
5	88	Consulting and Business Services	7.6
6	40	Building and construction	6.2
7	73	Hotels and restaurants	5.5
8	85	Medical and health care	5.1

unit, but they inflate the size of American cities more than Swiss cities. That is because American cities are generally more suburbanized than their Swiss counterparts. Furthermore, American suburbs tend to flow together with each other and their urban centers, whereas Swiss cities and their suburbs are more apt to be separated by lightly inhabited green belts. Furthermore, Swiss cities remain small even after they are “agglomerated”. Fourteen out of the 31 Swiss “agglomerations” in 1970 had less than 50 000 inhabitants. Only one Swiss agglomeration exceeds 400 000 in population, namely Zurich. The agglomeration of Zurich is the only one in Switzerland that could be considered a large urban area by world standards. In the process of adding suburbs to the city of Zurich and increasing its population from 423 000 to an agglomeration of 719 000 a few thousand farmers are added, the share of manufacturing increases from 24 to 27 percent, and the service sector is reduced from 69 to 65 percent. Similar modest shifts occur in broad employment patterns when all nine Swiss cities with more than 50 000 inhabitants are agglomerated¹⁸.

The development of railroad and motor transport slowed the growth of population in city centers and facilitated the growth of suburban “bedroom” communities. At the same time commuting made it easier for workers to remain in their declining home communities (often small town and rural) and find employment in other nearby centers where job opportunities were growing (Imhof, 1978, map 33). Nevertheless, most Swiss still live close to their place of work. Two out of three take less than half an hour to get to work¹⁹.

3. GOVERNMENT POLICIES MINIMIZING URBANIZATION

We explain Switzerland’s relative lack of urbanization and modernisation by analyzing the pattern of employment in that country on the assumption that employment is the basic determinant of where people live. That pattern has been determined primarily by the play of market forces. Phenomena such as shifting distribution of employment from agriculture to industry and the services, the displacement of handicrafts by factories, the increase in the size of service establishments and their concentration, the specialization of manufacturing in high quality products, requiring entrepreneurial know-how and skilled labor and varying degrees of capital intensity, etc., are in the first instance the result of profit maximizing and the entry and exit of firms in response to supply and demand. *Laissez-faire*, liberal laws and social attitudes of the Swiss enhance the flexibility of the

¹⁸ See *Eidgenössische Betriebszählung 1975*, Band 4, pp. 22 and 106. The exceptions are Luzern and Lausanne, who shift markedly in the direction of manufacturing, but still remain predominantly service-orientated.

¹⁹ The 1970 census asked every Swiss worker, commuter and non-commuter, how long it took them to get to work. Sixty-two percent of them took less than half an hour. *Eidgenössische Volkszählung 1970*, Band 6, 1974, pp. 88, 174. Rossi finds that most Swiss workers decide to move closer to their place of work when the journey to work exceeds 12 miles (1968, p. 209).

market. For example, a Swiss entrepreneur is willing to invest in a risky venture in a small community, knowing that if necessary he will be able to pull out and cut his losses without impediments such as large severance bonuses, worker occupation of his factory or government regulations that in many other European countries make it difficult to lay off workers. Switzerland has the reputation of interfering less with managerial prerogatives and the operation of market forces than any other modern country. Neither does the Swiss government take positive steps that favor urbanization such as the subsidization by the Italian government of iron and steel plants, shipyards, automobile factories, aluminium smelters, heavy chemicals, oil refineries, and the like. The result in Italy has been urbanization over and above that called for by market forces alone.

Laissez-faire liberalism and the predominance of market forces in the development of the Swiss economy are universally recognized. In trying to probe beyond underlying economic and social factors to explain the unusual patterns of employment we concentrate on an aspect that is not fully appreciated by outside observers, namely, government policies interfering with market forces to encourage urbanization. The Swiss government has relatively little to say on what its citizens' choice of occupation and how business is operated, but has considerable influence over where they work and live. The explanation of this unusual policy is to be found in the extremely decentralized functioning of the Swiss government. Our analysis concentrates on contemporary urbanization, but our approach is historical.

3.1. Historical Background

The original confederation was a very decentralized agglomeration of essentially independent cantons, and economic policies were determined almost exclusively by the cantons and the cities and towns. Before 1800 cantonal capitols ruled the other towns and countryside within their cantons, and favored trade and industry by moderate taxes, granting monopolies, etc. Only a city merchant had the right to import raw materials and export finished products, while the actual production took place in the homes of farmers who were subject to the city. City governments protected their privileges by restricting immigration. Industrial development and population growth was concentrated in the rural and mountain areas²⁰.

When machinery displaced manual work the new mechanized factories were set up in the same rural regions where the domestic manufacturing was being

²⁰Mayer, 1952, pp. 243-248 and Biucchi, 1973, pp. 638, also pp. 631, 632 and 639. Also see Roh, 1970, p. 97. An official inquest at Basel in 1786 found that of a total of 2 268 weaving frames in the canton, 2 242 were located in the countryside and only 26 in the city. This was the result of very strict obligations imposed on merchant manufacturers, prescribing geographical zones within which their frames had to be located. The putting out or domestic system was common throughout Western Europe. What was unique about Switzerland was the rigorous separation of manufacturing activity, relegated to the countryside, from commercial activity, reserved to the cities. See Roh, 1970, pp. 98-100.

driven out. The availability of water power also attracted factories to the mountain valleys. Therefore, basic infrastructure was decentralized and in place and the small town labor force was somewhat prepared for later industrialization. The Swiss labor force is relatively immobile, preferring to stay in the geographical areas where it was born and raised. Swiss industry on the other hand has always been mobile and tended to locate near the available labor force (Mayer, 1952, pp. 248-249; Roh, 1970, pp. 80-91).

Liberalism introduced by the French Revolution, facilitated the Industrial Revolution. Political liberalism deprived the ruling cities of their privileged position and instituted free circulation of labor, capital, and trade throughout the territory of the Confederation. The suppression of the urban guilds permitted factories to be established and labor to be attracted to the cities. Political centralisation unified the money, weights and measures, the postal system, improved internal transport and created a unified customs system. Economic freedom facilitated the displacement of the dispersed domestic system of manufacturing by factories and favored economic and demographic centralisation and urbanization. Nevertheless, the speed and degree of centralisation was limited by the tendency of the new factories to remain in the small towns and rural areas. In spite of the initial industrial revolution taking place during the first half of the nineteenth century, the proportion of the Swiss population living in cities over 20,000 increased very little. Switzerland since 1850 has been subject to the gradually increasing power of the central federal administration. Nevertheless, by world standards, Switzerland has remained very decentralized (Ibid., pp.107-118 and 145-148; Mayer, 1952, pp. 249-250; Biucchi, 1973, p. 635).

The process of urbanization accelerated during the second half of the nineteenth century, then slowed down after 1900 (see Table 2). The low degree of Swiss urbanization has been primarily due to the development of nonfarm employment outside metropolitan centers, favored by public policies. The second main thrust of Swiss policy inhibiting urbanization has tried to keep farmers on the land (Biucchi, 1968, pp. 21-23).

3.2. Federal Aids to Agriculture and Mountain Communities

In the late 1880s an economist and dynamic activist, Ernst Laur, took the initiative in organizing and leading a strong agrarian pressure group, whose principal objective was to maintain an abundant rural population. Agricultural developments were reinforced by two world wars and the intervening depression to win acceptance of Laur's policy of a vast governmental program of farm support and intervention against rural exodus and depopulation (Biucchi, 1968, pp. 20-28). The program included farm subsidies, tariffs, import quotas, buying up farm surpluses, market and price controls, transport subsidies, export subsidies, the disposal of surpluses, tax rebates, policies for farm improvements, investment grants, emergency loans, road building, renovation of farm buildings, income support,

subsidized social insurance, aid for agricultural research and erosion control²¹. In addition to these measures which serve primarily to support modern farming in the prosperous rolling plains, gradually more attention has been focused on the plight of poor farmers and other inhabitants of the mountain valleys, where exodus and depopulation have been more severe. As a result Switzerland has what might be the strongest farm support program in the non-communist world.

Measures to slow exodus from the mountains included not only farm support, but also the promotion of manufacturing, commerce, communications, and tourism and other actions to close the gap in living standards between the mountain and plains regions (Biucchi, 1968, pp. 32-33). Several promotional measures provide better conditions or higher subsidies for mountain farmers than for those elsewhere. Several kinds of investments are subsidized only in mountain districts, and subsidies lower the cost to the mountain farmer for tools and machinery. A mountain farmer, for example, can receive about \$2500 a year for keeping 15 cattle or a subsidy of about \$7000 for building a house. A recent study found that all subsidies received in mountain communities averaged about \$360 per inhabitant and that per capita subsidies to the smaller communities were almost four times as high as to the larger communities²².

Studies trying to explain why the mountain districts in France have undergone much more rapid rural exodus and depopulation than counterpart districts in Switzerland attribute the Swiss success in slowing exodus to the efforts of local governments and private associations constantly supported by the cantons and the confederation (Gravier, 1954, p. 94; Roh, 1970, p. 223).

3.3. Cantonal and Local Support for Decentralization of Industry and Services

The Swiss federal government (in which rural and mountain cantons are overrepresented) retarded urbanization by a vigorous program of aid to agriculture and to the small, rural mountain communities. At the same time Switzerland's local and regional governments probably have a greater share of power than any other nation in the world, and have used their power to retard urbanization by supporting the decentralization of nonfarm employment. Small communities and rural regions everywhere regret the loss of employment and population to big cities and more crowded regions, but in many countries they have little independent power to block the trend. Switzerland lacks a strong central government favoring the capitol city and its region. At the same time Switzerland has 26 independent regions and over 3 000 strong and independent communities each favoring its own

²¹ See E. Laur, 1942, pp. 159-184, and Organization for Economic Cooperation and Development, 1973, passim. The OECD reports entitled *Agricultural Policies in Europe and North America*, Report No. 1, 1956, pp. 221-235; Report No. 2, 1957, pp. 277-249; Report No. 3, 1958, pp. 261-278; Report No. 4, 1960, pp. 123-140; Report No. 5, 1961, pp. 299-310; and *Agricultural Policies in 1966*, pp. 487-507.

²² The per capita subsidy in the larger mountain communes with 500 to 2000 inhabitants was 399 francs, rising to 766 for those with 200-499 inhabitants and to 1389 francs in communes with less than 200 inhabitants.

economic development. Furthermore, there is a balancing mechanism whereby the growing communities after a certain point desist and even oppose further growth.

A decentralized government spills over into a decentralized economy, which in turn leads to a decentralized pattern of urban settlement. If Bern were the capitol of a centralized nation like France or Italy, one would have expected the central government to build railroad and highway networks radiating out of the national capitol as they do out of Paris and Rome. Instead, the individual cantons long ago took the initiative, and the resulting Swiss transport network promoted more decentralized economic development. During the Great Depression two communities in the Canton of Neuchatel took the initiative to diversify the cantonal industries which were too concentrated on watchmaking. Meanwhile the Swiss watch manufacturers organized and got the federal government to grant them a substantial loan and pass a law to help rationalize the industry and prevent its exodus from the villages and small cities where watch manufacture is concentrated. Immediately following World War II several of the poorer and more agricultural cantons promoted industrialization as a way to counteract rural exodus. They offered subsidies and tax reductions to develop new industrial enterprises, created special industrial development commissions, made available industrial real estate, subsidized the creation of industrial zones and the construction of industrial buildings. Several signed an intercantonal agreement and set up an Office of Coordination to support the installation of artisanal and industrial enterprises in mountain regions.

We see a pattern of initiative from two key groups in Swiss society, business and agriculture, putting pressure on the government to take steps that alleviated rural exodus. The farmers have been more successful in eliciting support from the federal government, whereas businessmen have been more successful at the local and cantonal levels.

3.4. Social and Regional Tax Concessions to Decentralize Employment

Because of Switzerland's decentralized political system the bulk of Swiss taxes are imposed and spent by the individual cantons and communities. Swiss local and cantonal governments have very strong taxing and spending powers and they use these powers to attract employment. Furthermore, Swiss local and cantonal governments can do this whether the federal government likes it or not. The opposite situation prevails in Switzerland's neighbors, France and Italy, where most taxes are collected and spent by the central governments.

For a very long time local governments and cantons have competed for industrial and service establishments, for example, by selling or leasing community land at bargain rates, and especially by tax concessions. Since almost all Swiss industry is relatively "footloose", (not tied to local sources of raw materials, etc.) tax concessions and other local and cantonal investment incentives are often decisive in the choice of where to locate an establishment. Normally a prospective investor approaches the local authorities and bargains for an agreement about the level and duration of taxes paid, say for 10 years. In most cases 80 percent or

more of the business income and capital tax burden is imposed by the cantons and communes. For individual persons the canton and commune share of direct taxes is even greater. Therefore, business executives often bargain with local and cantonal authorities also about their personal tax burdens, when deciding where to locate their establishments (Allgemeine Treuhand AG, 1964, pp. 100, 116).

Swiss tax competition tends to distribute employment widely, leading investment towards places lacking nonfarm employment. A town without a factory is eager to make a good deal. However, a town with a number of plants and full employment is less willing to make tax concessions to create more jobs. Thus the competition among localities to attract employers tends to be self-limiting. Faced with farm exodus the small towns and rural cantons compete actively for nonfarm employment. Cities and growing regions in the valleys and plains offer fewer inducements and even try to impede the influx as they grow and become overcrowded. Furthermore, the smaller the community and canton the less power they have in the bargaining process, and the more likely that they will grant favorable tax concessions. A new plant with 100 employees that might double the industrial labor force and business tax receipts in a small town would only be a drop in the bucket of a large city.

3.5. Competition for International Company Headquarters and Service Operations

Each of the 26 cantons and most of the 3,000 communities usually benefit from attracting employers to themselves and tax rates are usually much lower in the smaller cities and rural cantons (Table 11). The federal government might have special reasons to want an employer to locate in one town or canton rather than another, but until recently it usually had been indifferent. Swiss cantons and communities compete especially to attract international business companies by giving them special tax treatment. This practice has made the international community aware of the long-standing competition among Swiss communities to attract business. Corporations are exempted by a number of cantons from paying any income tax provided they do not engage in any business activity in Switzerland and limit their staff to what is necessary for their own administration. This means there is no taxation of the internationals' profits by the canton and commune. Some cantons do the same for corporations who only perform services on behalf of subsidiary companies. Some cantons exempt from profit taxes or greatly reduce taxes on companies that centralize their worldwide sales in Switzerland, but do not ordinarily sell in the Swiss market. Thus many multinationals have small headquarters in small cities and towns. Finally, and most important, as an incentive to the establishment of new industries operating in Switzerland cantons grant partial or total exemptions from taxes for up to ten years. In all cases, however, the federal government continues to collect its own income tax (called the defense tax). (Allgemeine Treuhand AG, 1964, pp. 100-106.)

Prior to 1948 there was practically no limit to the power of each canton, and within certain cantonal limits of each community to tax as it saw fit. Business

contemplating a new establishment could shop around until they came to a satisfactory tax agreement, and the individual cantons and communities could give whatever concessions found necessary to attract the employers and taxpayers they wanted. The result was one of the lightest average tax burdens in the modern world²³.

The Canton of Zurich, consisting primarily of Switzerland's largest city and its suburbs, is such a desirable base for business, being one of the world's foremost business and financial centers, that it sees little need to compete to attract additional employers. Hence its tax laws are less liberal and flexible than most other cantons, and work permits for key personnel are difficult to obtain²⁴. Nevertheless, Zurich was reluctant to lose wealthy tax payers and prosperous businesses, because of the competitive tax policies of other cities and cantons. The federal government was also disposed to limit the competitive tax struggle, but lacked the authority to interfere with the tax powers of the cantons and local communities. So Zurich took the initiative in setting up a treaty among the 25 cantons by which they would mutually agree to limit the tax competition among themselves, especially tax agreements between individual employers and local governments. In December of 1948 a treaty was signed by a number of cantons, and by 1964 the last hold-outs, the rural cantons of Graubunden and Schwyz, had signed²⁵. Nevertheless, local and cantonal authorities retained considerable freedom to make individual rulings and bargains within the framework of the 1948 Tax Concordat.

Although the cantons and local governments had less flexibility in making tax agreements tailor-made for each individual employer, they by no means lost their ability to compete with each other and with foreign countries by means of general tax laws and decrees and their application to individual cases. Tax rates continue to differ enormously from one canton to another. In 1958 the total direct taxes of a business firm were from two to three times as much in the highest tax canton as the same firm would have to pay in the canton with the lowest tax rates. And a holding company would have to pay twenty to thirty times as much in the highest tax canton as in the canton with the lowest tax rates for that type of company²⁶. Swiss voters have consistently rejected attempts even partially to

²³ Allgemeine Treuhand AG, 1964, p. 131. Competition among the cantons and communities to attract industry and wealthy citizens had the side effect of keeping overall Swiss taxes low. In 1962 the total of all kinds of taxes – federal, cantonal and communal direct taxes on income and capital – hardly ever exceed 30 percent of taxable profits. Ibid., pp. 105-106.

²⁴ *Business Europe*, March 15, 1961 (reprint), p. 24. Cantons can encourage or discourage foreign firms by making it easy or difficult to get work permits.

²⁵ Allgemeine Treuhand AG, 1964, p. 150. See also Bianchi, 1960, p. 16. The text of the 1948 Concordat can be found in J. and E. Henggler, latest edition.

²⁶ Examples were calculated for firms with various amounts of capital and annual profits of from 5 000 francs to 500 000 francs per year. The total taxes included those that would have to be paid to the commune, canton, and federal government. The total tax burden was calculated for each of the 25 cantonal capital cities. For example, a firm with capital and resources of 1 000 000 francs and annual profits of 250 000 francs (considered an average return) would pay 45 568 francs in total taxes

equalize the widely divergent cantonal tax burdens. In 1977, however, the Swiss voters approved a constitutional amendment which left to the federal government the task of formally harmonizing the rules about direct taxes imposed by the cantons and communes. Why has this new effort been called for? Because the intercantonal tax treaty of 1948 apparently turned out to be ineffective (Stauffer, 1978, p. 5).

3.6. *Are Swiss Inducements to Decentralized Industry Uneconomic?*

American economists generally condemn local subsidization to attract industry as unwarranted interference with the efficiency of resource allocation. Furthermore, it is commonly held that the practice is self-defeating, because it induces other communities to do likewise, so that one community's gain is offset by another's loss, with the result that communities offering industrial subsidies are engaged in a zero-sum game²⁷. Government policies such as the Swiss employ to keep farmers on the land and out of the big cities are likewise frequently criticized as interfering with allocative efficiency and development. In spite of economists' forebodings the Swiss have attained their social and political objectives and at the same time accomplished the supreme goal of the proponents of economic efficiency, namely, the world's highest per capita GNP. What are some of the reasons why the Swiss have succeeded in mitigating urbanization without giving rise to appreciable economic costs? ²⁸

Continual unemployment and especially underemployment in Swiss rural areas faced with steady population growth and declining agriculture would have slowed the growth of GNP²⁹. This could have been alleviated by favoring the mobility of labor out to urban areas, but because of the strong preference of most Swiss for living in or near their own localities, such policies have been carefully avoided. Instead the Swiss government at all levels has favored the mobility of capital to areas of surplus labor in the countryside, small cities and towns. Policies favoring farmers and mountain zones have clearly done this, and community inducements to attract nonfarm employers must also have favored the net movement of capital to areas of relative labor surplus. This is because not every Swiss canton and community has an equal interest in offering inducements. The incentive to offer inducements is greatest in those communities with the greatest labor surplus and vice versa. A high proportion of Swiss industries and services are foot-loose and have been attracted by the combination of community inducements and available labor. Success in attracting employers reduced the interest of a communi-

in the "cheapest" of the 25 cantonal capitols and 117'650 francs in the highest tax cantonal capitol. See Weidmann, 1959, pp. 314-316.

²⁷ Cumberland and Van Beck, 1967, p. 254 and Schultz and Harris, 1965, pp. 65, 344, 482-483. See also Mulkey and Dilman, 1976, pp. 37-43.

²⁸ Some of the reasons have been suggested by Rinehart and Laird in their interpretation of American and British experience (1972, pp. 73-90).

²⁹ On the labor surplus in rural areas see the contributions of Pasquier and Valarché in Commission nationale suisse de l'UNESCO, pp. 126-173.

ty in continuing the activity. Cities with full employment do not have to increase their capital stock in order to expand employment and maintain a dynamic full employment equilibrium, which would have produced zero-sum results.

American and British economists have made observations about their own economies which are equally *à propos* for Switzerland (Rinehart and Laird, 1972, p. 84). People have preferences about where they want to live and their life style. Moving involves costs of uncertainty and disruption. Hence regional underemployment persists even though workers ultimately have to move to find jobs. The increased flow of capital to the small, rural Swiss communities may have relieved underemployment that could not have been eliminated by complete reliance on labor migration to the bigger cities. By increasing the flow of capital to the smaller communities the Swiss slowed migration into the larger urban centers, thereby reducing the costs of urban congestion and pollution, which are so obviously slowing the growth of American and British GNP. Furthermore, even though capital might have been attracted to the labor surplus areas in the long run as part of the normal operation of market forces, the local inducements have hastened the process of dynamic adjustment and created additional income and employment ahead of time (Laird and Rinehart, 1967, pp. 26-27).

We have observed that Swiss medium-sized and small cities and towns attract employers by providing external economies which are lacking in the same sized communities in other countries. These external economies include the proximity of firms supplying components, materials, repairs, and other business services, consumer amenities, social overhead capital like transport, vocational education, banks, cheap public power, sewage disposal, etc. Their presence is due primarily to public policies with long historical antecedents. Attraction of nonfarm employers serves to maintain and enhance the existing facilities and avoid the cumulative deterioration that accompanies rural depopulation.

We have shown that large firms can furnish themselves with many of these supplies and services that have to be furnished to small firms from outside. Their provision in relatively small Swiss cities and towns is particularly important to small and medium-sized employers³⁰. In the absence of the longstanding public policies tending to decentralize employment Swiss industry would be larger in size and congregated in larger urban areas. Swiss cities would be further enlarged and Switzerland, like many other countries might have promoted those industries that facilitate urban agglomeration. Probably Swiss GNP per capita would then be even higher than it is today, but my guess is that the difference would be less than most of us would expect. I suspect that economists tend to exaggerate the increase in internal economies that result from large-scale establishments and over-estimate the external economies available only in large cities. The Swiss may not be paying a high price for an economy based on small establishments in small communities.

³⁰ Mulkey and Dillman, 1976, p. 41. Note the importance to small firms of securing finance at reasonable rates of interest. That underlines the importance to them of small city banks and local aid in financing.

4. FEDERAL INTERVENTION TO CONTROL URBANIZATION

4.1. *Recent Population Growth and Immigration*

The Swiss model of development was dominant to the late 1950s: urbanization was minimized by slowing agricultural exodus, maintaining the predominantly service function of the larger cities, and creating small scale and artisan type manufacturing as well as tourist facilities in villages and rural communities. Then the enormous postwar demand for Swiss manufactures and services like tourism and banking put pressure on the Swiss labor market. This was met by the sudden importation of hundreds of thousands of foreign workers. On top of this the postwar baby boom accelerated the natural growth of the population density throughout the country, especially in the northern plateau where the bulk of the population lives. Between 1950 and 1970 the population of Switzerland increased by 1 554 000, 54 percent of whom were foreigners. Most of the immigrants were young men, over half from Italy. Six hundred and fifty-seven thousand foreigners participated in the labor force, two-thirds in industry, almost one-third in the services and only one percent in agriculture³¹.

The big influx of foreign workers had little influence on the pattern of urban concentration, as conventionally measured. The concentration of foreign workers varies considerably from one community to another, but when the communities are grouped by size the differences in the shares of foreign workers practically disappear. If, however, we allow for the six percent of the Swiss labor force remaining in agriculture, the influx of foreign workers must have had a slight tendency to increase urbanization³².

Although the foreign workers distributed themselves quite evenly throughout the range of cities from large to small, the foreign influx nevertheless increased

³¹ Eidgenössisches Statistisches Amt, 1970, Band 12, pp. 54-55. Foreign residents increased from 115 000 in 1860 to 552 000 in 1910, decreased to 285 000 in 1950, then jumped to 585 000 in 1960 and well over a million in 1970 (excluding seasonal and frontier workers). See Eidgenössisches Statistisches Amt, 1976, pp. 13 and 25. The average annual net immigration or emigration of foreigners by census decade since 1888 is the following: 1888-1900, 10 951; 1900-1910, 13 123; 1910-1920, -10 960; 1920-1930, 1819; 1930-1941, -5100; 1941-1950, 12 614; 1950-1960, -37 234; 1960-1970, -35 784. *Ibid.*, p. 50 and earlier volumes.

³² Practically all foreign farm workers are seasonal, and seasonal workers are not ordinarily counted as Swiss residents. If, however, three seasonal foreign workers (most of whom work in agriculture, hotels and restaurants) are counted as the equivalent of two regular foreign workers, the share of foreign workers in small towns and rural communities is increased. See Table 4, "Ausländerbestand nach Geschlecht, Aufenthaltskategorien und Staatsangehörigkeit Ende April 1978", *Statistisches Jahrbuch 1978 des Schweiz. Städteverbandes*, and earlier issues.

The negligible impact of the influx of foreigners on urban concentration can be understood in terms of the occupations of the foreign workers. Their absence from agriculture was counteracted by their high share of employment in construction and hotels, both of which are very important in rural areas. Their relatively high share in manufacturing did not inflate the relative population of large cities, because Swiss manufacturing is concentrated in small cities and towns. See Eidgenössisches Statistisches Amt, 1976, pp. 32-33.

the total population living in all cities taken together. During the 1960s, only an average of 14 percent of the Swiss population were foreigners, yet during the decade 45 percent of the growth of all cities greater than 10 000 in size was attributable to the growth of the foreign population (Eidg. Statistisches Amt, 1974, Bd. 3, p. 56).

Although contributing little to conventional urbanization, the rapid growth of population, primarily of foreign origin, was the underlying reason for a post-war increase in "agglomeration"³³.

Because 38 out of the 55 units in which the so-called "agglomerated" population lives are below 50 000 in size, this concept of urban concentration is not very useful for our purposes. There is, however, a substantive development that worried many Swiss leaders and is a factor behind their recent call for direct controls on urban growth, namely the growing concentration of population in the region known as the Swiss Plateau. One of three natural regions, the Plateau includes 35 percent of the surface area and 77 percent of the Swiss population (325 inhabitants per square kilometer). The Plateau forms a wide, relatively flat band stretching from Lake Geneva in the southwest to Lake Constance in the northeast, to which are added the urban agglomeration of Basel in the northeast and the less mountainous parts of Ticino in the southwest. Recent growth has focused on the shores of certain large lakes, the mouths of the principal alpine valleys and on important communication centers and caused population in the Plateau to grow more rapidly than in the other natural regions (Eidg. Statistisches Amt, 1974, Bd. 3, p. 75, pp. 180-187). Visual observation of aerial photographs and travel throughout the Plateau region confirms these recent developments disturbing Swiss regional planners. Suburbs and detached independent cities and towns are growing with the result that the green belts between urban areas are narrowing. The two underlying causes have been the influx of foreign workers and the migration of Swiss rural inhabitants from the mountainous regions of the Alps and the Jura to the Plateau.

4.2. Federal Intervention to Control Immigration Reduces Pressure for Urbanization

The flood of foreign workers following 1950 evoked strong social and political reactions, calling for sharp restrictions on the size of the foreign population. Several initiatives calling for restrictions on foreigners were defeated by the Swiss voters, but in response to the public outcry the federal government took adminis-

³³ Eidgenössisches Statistisches Amt, 1970, Band 12, pp. 42-51. Another underlying reason for the increase in the speed of "agglomeration" between 1950 and 1970 was the increase in the rate of agricultural exodus. The share of agriculture in the labor force dropped from 21 percent in 1950 to 8 percent in 1970.

trative measures against the influx. The growth of the foreign labor force dropped precipitously between 1963 and 1973³⁴.

Following 1974 three new developments combined to turn net immigration into a large outflow of foreign workers and a drop in the foreign resident population. The worldwide recession in conjunction with the appreciation of the Swiss franc reduced demand for the export of Swiss manufactures, and the cessation of inflation put an end to the Swiss building boom. Native Swiss workers were given preference over foreigners in layoffs, and although foreign workers were rarely expelled, the number of seasonal and annual work permits granted to foreigners wishing to enter or reenter the country were cut back sharply (Commission fédérale consultative pour le problème des étrangers, 1977, pp. 557-563; Frey, 1976, pp. 297-298). The growth of the foreign labor force dropped sharply after controls were imposed in 1964, but the foreign resident population continued to grow rapidly, because of its excess of births over deaths. The excess of births over deaths among the native Swiss population remained substantial until 1964, since then growth has dropped practically to zero. The restrictions on the influx of foreign workers since 1964 finally caused a downturn in the natural growth of the foreign population following 1974. Although still positive, the natural growth of the foreign population has been swamped by the large net outmigration of foreign workers since 1974. Officials in Berne generally seem to agree that the rapid population bulge of the 50s and 60s and consequent pressure towards urbanization (or agglomeration) is a thing of the past.³⁵

4.3. Federal Intervention to Control Economic Decentralization and Safeguard the Environment

Through the mid 50s the Swiss minimized urbanization primarily by developing job opportunities in small cities and towns. Then population pressure, higher incomes and growth in the demand for services deflected people and employment from the center of cities to the suburbs and satellite towns. Urban sprawl, the clutter of recreational second homes, and excesses in the construction of tourist facilities turned out to be hard to stop without zoning and other direct controls on construction. But the individual communities found it difficult to control their

³⁴ See Commission fédérale consultative pour le problème des étrangers, 1974, pp. 341-342. The policy was carried out in the first instance by cutting back on new work permits valid for one year. They were cut back from a maximum of 179 513 in 1962 to 70 389 in 1970, and 25 343 by 1977. (New seasonal work permits peaked at 244 103 in 1972, falling to 99 033 by 1977). The number of foreigners (excluding season workers) active in the Swiss labor force increased by 255 000 during the five years 1960-1964, but by only 58 000 from 1965 through 1969, and then decreased by 9 000 between 1970 and 1974. See Commission fédérale consultative pour le problème des étrangers, 1978, pp. 128,131.

³⁵ Since 1941 there has been a small but continuous net loss of population attributable to the excess of emigration over immigration on the part of native Swiss citizens, which averaged around two thousand per year through 1975. See Eidgenössisches Statistisches Amt, 1961, p. 83, and 1976, p. 99.

own growth. The dysfunctional consequences of the Swiss model, based on each community promoting local manufacturing and construction, evoked zoning and regional planning under the aegis of the federal government. The decentralized Swiss system, while succeeding in providing manufacturing, construction and tourist-related jobs in small towns and rural areas, nonetheless damaged the landscape in the process. The success in providing jobs and mitigating urbanization was achieved at a social cost, which aroused opposition that imposed direct controls through the national government.

The developments of the 50s and the 60s gave rise to nationwide debates about how to promote economic development and job creation in areas threatened with depopulation and at the same time slow urban agglomeration, safeguard recreational areas and the environment. A complicating factor which reinforced calls for federal initiative in zoning and regional planning was the boom in the construction of second homes in rural areas. The first result of the debates was a federal law of 1965 encouraging housing development in conformity with a more rational and geographically controlled urbanization. The Federal government then promoted studies and promulgated directives about local and regional planning.

In 1971 only about half of the localities in Switzerland had zoning laws. A proposed federal regional planning law would have allowed eight years for the cantons and local communes to prepare zoning plans and put them into effect. In the meantime there was good reason to believe that uncontrolled construction of housing, tourist facilities and manufacturing plants would do irreparable harm to the landscape and would preempt the open terrain required for recreation and public parks near urban centers. Therefore an emergency law was passed by the Federal Parliament in 1972, which required the Federal government to step in and take necessary measures if the cantons failed to set up the protected zones soon enough, or if they failed to administer them effectively (Rotach, 1974, pp. 1-10).

While the Federal government was busily trying under the emergency law to control what it considered the worst excesses permitted by the local communities and cantons, the federal planners drafted a permanent regional planning law, which was passed by the Federal Parliament in 1974. The planning carried out under the emergency law of 1972, the detailed permanent Federal law of 1974, plus the publication and discussion of the specific planning programs and their prospective implementation called forth opposition from so many quarters that in a nationwide referendum in June, 1976, the Federal law on regional planning was rejected. Nothing daunted, the Federal Parliament voted to continue in effect the emergency law of 1972, and regional planning has continued much as before. Following the rejection in 1976 of the first federal law on the subject, a second law was passed June 22, 1979. The new law is shorter, simpler, and much less detailed than its rejected predecessor, and stands a good chance of being approved by the voters in a referendum. The apparent role of the Federal government is drastically played down, but key federal powers remain, and could be interpreted to give practically the same controls to the Federal government that it had in the earlier rejected law.

While all this was going on, another law was passed in June 1974 and accepted by a referendum, which introduced an effective system of planning for all of the Swiss mountain regions. In order to get investment help under this law the formerly isolated and independent mountain communities have to join together in regions. Formerly autarchical and rival communities have to get together, agree on development goals, and draw up regional plans. This law promotes strong federal regional planning in an area where cantonal and local autonomy has always dominated (Wegelin, Weber, 1977, pp. 3-24).

4.4. Recent Changes Reducing Immediate Need for Direct Controls on Urbanization

By 1977 many of the underlying factors which had given rise to anguished calls for direct controls on urbanization had drastically changed. Population growth which amounted to over 15 percent per decade in the 50s and 60s, had fallen to zero by 1977. The birth rate of the native Swiss population had dropped almost to equal the death rate. The excess of alien births over deaths was more than counterbalanced by net emigration. If the Federal authorities continue their policy of reducing the number of foreign workers by restricting the number of work permits, it is questionable whether in the coming two decades there will have to be any net new job creation at all. Job creation as well as urbanization (or lack of it) will depend primarily on internal migration, and the main previous source of internal migrants, the declining farm population, is now down close to rock bottom.

To the easing of population pressure must be added the energy shortage and the 1976 recession which further (if temporarily) reduced the demand for investment and the need to find space for new industrial and housing construction³⁶. Future Swiss urbanization probably will primarily take the form of suburban sprawl, consisting of single and double houses and more luxurious apartments. This will require zoning to protect the landscape, to minimize encroachment on farmland, and to provide space for urban recreation. None of these problems are intractable. Moreover, the decentralized Swiss system completely avoided and has never had to face the much more serious and less tractable problems of large, metropolitan urbanization and its myriad disadvantages. Swiss urban planners are worried about the "large urban agglomerations" of Bern and Lausanne, when in fact they are two of the most attractive and prosperous little cities in the world! The Swiss federal government is pleased when employers and inhabitants move out of the centers of Geneva, Basel, and Zurich, which are still attractive places to live and work. By contrast, look at the dilemma in which the United States finds itself. By permitting our own biggest cities to reach unmanageable size, from which both employers and inhabitants flee in dismay, the United States federal government finds itself in the ridiculous position of embarking on an expensive program to draw them back into the big cities again.

³⁶ Leuzinger and Matthey, 1977, pp. 1-11. The plague of second homes was aggravated by an influx of foreigners buying rural land and building second homes. This led to the passage of a federal law prohibiting foreigners from buying homes in Switzerland.

5. SOME POLICY IMPLICATIONS OR LESSONS OF SWISS EXPERIENCE

The experience of almost every developed country suggests that the big cities are an inevitable concomitant of modernization. Those who like big cities assume that they are an inevitable "benefit" of modernization. Those who do not like big cities assume that they are an inevitable "cost" or price to pay for modernization. Switzerland demonstrates that it is possible to be very modern and very wealthy without big cities. Switzerland is unique in many respects, and no country should try to clone itself on the Swiss model, as the countries of Eastern Europe tried to make themselves into miniature versions of the Soviet economy or as Italy reproduced American steel mills, oil refineries, aluminium smelters, heavy chemical plants, etc., in an inappropriate Italian environment. Nevertheless, developing countries and developing regions within modern countries might want at least to consider the Swiss alternative, and try to develop with less urbanization than their developing contemporaries.

Switzerland's small size relative to countries like the USA, the USSR, and China makes her experience more relevant to the less developed countries, the great majority of whom are smaller than Switzerland. In fact, Switzerland's population is larger than 55 percent of all the countries in the world today.

The Swiss promote capital mobility in preference to labor mobility, generating nonfarm employment outside of big urban agglomerations. Countries that for whatever reason decide to promote capital mobility in preference to promoting greater labor mobility will be emboldened to do so by the Swiss experience. The price they will have to pay in terms of less economic growth and efficiency may not be prohibitive. Swiss experience indicates that geographical labor immobility may not be such a drag on economic growth, nor so inefficient as economists imagine when they view the extreme mobility within the U.S.A. In the same spirit development planners need not succumb to apathy about urbanization. They should start from the beginning to discourage excessive urbanization and to slow the slight from the land, and not be overawed by economists who tell them the price is too high.

The Swiss job generation process relies almost exclusively on small manufacturing and service establishments. The average Swiss industrial establishment has about one-quarter as many workers as its American counterpart. Development planners will be interested to discover that in recent years the lion's share of net job creation in the United States has also taken place in small enterprises. A recent study has shown that between 1969 and 1976 some 66 percent of the net increase in U.S. employment was generated by firms with 20 or fewer employees, and firms with over 500 employees generated only 13 percent of the net increase (Birch, 1979, appendix C-20).

The Swiss have found that small establishments have many incidental advantages. They make more use of local labor and entrepreneurial talent, which big plants often have to import. In rural and undeveloped regions there is a large risk of failure due to the lack of infrastructure and external economies as well as a

limited local market. The risk of failure is minimized by attracting small labor-intensive plants. At least they provide transitional employment even when they later disappear. Of course, a locality may be tempted to try to catch a big, capital-intensive establishment, which is stuck with an investment it cannot quickly abandon, thus continuing to provide employment (at great cost to the national economy). But the impact on the locality is less harmful if a misjudgment has been made, as often happens, and the plant that has to close is small. Small establishments have the advantage of flexibility, and if necessary they can reduce their workforce or close with less serious local impact and less trade union and government opposition.

Swiss experience would encourage developing countries to promote from the beginning cottage industries in rural areas. Vigorous development of rural cottage industry provided Taiwan with nearly 7.5 percent more jobs every year from 1956 to 1966 and some income for 70 percent of its farming households in 1970. The Indian government is now putting renewed emphasis on the development of cottage industries (The Economist; The Christian Science Monitor). Swiss development indicates that pre-industrial cottage industries have the additional advantage of providing a trained labor force on the basis of which modern manufacturing can be built outside of urban centers.

When governmental units, Italian style, spend large sums of public money to attract specific large establishment to a region, they are in effect substituting their own business judgment for that of private entrepreneurs, and their lack of knowledge of business prospects is very likely to be disastrous. But not if, Swiss style, the local leaders stand ready to help small establishments who come to them for aid in setting up business. It is better to let private entrepreneurs rather than government bureaucrats or politicians make business decisions.

Some people maintain that Switzerland is so modern and well-to-do that her experience is nontransferable to the underdeveloped countries of today. We should recall, however, that the Swiss have been acting to slow rural depopulation and minimized urbanization for a very long time, back in the days when Swiss real per capita incomes were equal to lower than those of many of today's less developed countries. The policy implication is to act early in the game, and not to postpone action until the consequences of overurbanization become almost unmanageable.

By contrast Italy did little or nothing to discourage urbanization until Mussolini passed laws preventing the rural population from moving into the cities, laws which continued to be enforced until the 1960s. These restrictions exacerbated the problems in the long run. The Swiss made no attempt to restrict the geographical mobility of its labor force, but instead took steps to encourage its farmers to remain voluntarily on the land and enable its workers to find jobs outside large urban areas. In applying the lessons of Swiss experience one must keep in mind that a very important reason for the growth of cities in the less developed countries today is the population explosion, and, of course, they should try to slow population growth if they want to reduce the pressure for urbanization. The Swiss population grew steadily for long periods of time and Swiss population den-

sity as a result is high, which makes it difficult to control urbanization. However, the Swiss population of the 1950s and 1960s was the consequence primarily of the influx of foreign workers and the rapid natural growth of the foreign population, which now seems to be under control. The Swiss have recently reached the point of zero population growth, but Swiss experience in this achievement does not seem particularly relevant to today's less developed countries. One might simply point out that one reason for Swiss restrictions on immigration since 1963 was the desire to reduce overall urban growth.

The lessons of Swiss experience can be more clearly perceived in the form of our three prototypes: villages and rural communities with less than 1 000 inhabitants, small cities with 10 to 20 thousand inhabitants, and medium-sized cities with from 100 to 200 thousand residents. The Swiss have an extremely strong support system for agriculture, which is the most important governmental program keeping people in villages and rural communities with less than 1,000 inhabitants. Their experience suggests that price supports are not enough to keep farmers on the land and should be supplemented by less costly direct income supports and other aids to agriculture.

Swiss rural communities have a strong comparative advantage in recreation and tourism and have been quick to promote employment in this industry. The problem in recent years has been how to dampen their enthusiasm, to discourage them from putting a ski-lift on every Alp. Outsiders, however, are unaware of how successful the Swiss villages have been in promoting employment in very small manufacturing and construction establishments.

The most important policy implication from the small cities prototype is that these communities are large enough to support the full range of modern Swiss manufacturing. They can be made to provide the necessary infrastructure and support services and an efficient network of mutual suppliers, provided that the small cities are located in fairly close proximity to each other. Swiss experience indicates that the great bulk of manufacturing should be located in cities and towns between 1000 and 100 000 in size.

Cities with from 100 000 to 200 000 inhabitants should concentrate overwhelmingly on the services. Above all no city should encourage manufacturing in its central core. Manufacturing has never become entrenched in the center of Swiss cities. Developments like the steel mills of downtown Pittsburgh and Buffalo, the stockyards of Central Chicago, or the garment district of Manhattan, would never have been permitted in the center of Swiss cities. The presence of considerable manufacturing in the outlying areas of Switzerland's two largest cities accounts for the fact that they exceed 200 000 in population. Switzerland has no cities or metropolitan areas approaching the million mark, but Swiss experience indicates that the recent move of American and British manufacturing from central cities to the suburbs, and their replacement in the urban centers by service establishments, and service employees who want to live near their places of employment is a step in the right direction³⁷.

³⁷ For the British experience from 1971 to 1976, see *The Economist*, September 3, 1979, p. 94. The switch in New York City began back in 1953. See Citibank, 1970, pp. 7-10.

We cannot turn back the clock and dismantle the enormous metropolitan areas we have already built, but some 70 percent of the U.S. population live on less than two percent of our land area, which leaves some room to maneuver on the rest. The options are limited for remaking New York City, but there is still room to maneuver in upstate New York. Swiss experience is relevant to regional and urban planning in upstate New York.

Swiss experience counsels against those countries lacking coal and iron ore who nonetheless encourage the creation of big iron and steel mills, who lacking oil insist on building refineries and petro-chemical complexes even beyond their domestic requirements. Those countries with raw materials for their own heavy industry, and who go in for large-scale assembly operations may have to accept urban agglomerations like Detroit, Cleveland, Pittsburgh, Birmingham and the Ruhr, but light industry can thrive in small cities and towns, and the most sophisticated services can thrive in medium-sized cities of modest dimensions.

Swiss experience highlights the advantages of strong local initiative and decentralized political power, preferably from the beginning of economic development. Strong central government and pervasive bureaucratic leadership are not essential to successful modernization. Furthermore, strong local initiative and participation have a tendency to minimize urbanization in the process of modernisation.

In countries with big governments big business gets more support because it has the staff and know-how to deal with bureaucrats. Furthermore, it is much easier for a government bureaucracy to spend \$100 million on a few big firms than on a myriad of little independent projects. Small local governments don't have much to spend, and are more willing to deal with and help small business. The key to minimizing urbanization is the promotion of small business.

Swiss and American federalism have much in common. In both systems the states and cantons promote industrial decentralization. However, the Swiss have much stronger local governments at the base of the system, and the Swiss federal government at the summit is much weaker than its American counterpart. Strong local governments tend to initiate policy, and Swiss experience indicates that it is good to have the local periphery initiate policies. If the federal government provides subsidies and tax concessions out of its resources, this nullifies the self-limiting aspect of locally paid for inducements. If Washington or Bern provides free inducements, every state, canton and community tries to get as much as it can. If the cantons or states provide inducements there is a tendency for all of them to do so, because every state or canton has at least some localities looking for more business. On the other hand, localities will generally pay substantial inducements out of their own pockets only if they have substantial unemployment or underemployment.

The Swiss federal government has taken positive steps to inhibit urbanization primarily in agricultural and mountain zones. In recent years the federal government has stepped in to minimize the excesses and the dysfunctional aspects of cantonal and local promotion of industry and services. Its role in this recent

endeavor also deserves careful study and attention. The Swiss have had more experience than any other country with both the advantages and disadvantages of preserving agriculture and developing light industry and tourism in a decentralized economy.

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Table 1. Percent of population living in cities of over 20000 inhabitants in selected countries, 1800-1960.

Rank in Country in 1960	1800	1850	1890	1920	1960	% of labor force in agriculture c. 1890
1 England & Wales	17	35	54	—	83	10
2 Japan	—	—	10	—	72	76
3 Australia	—	—	39	49	67	26
4 Philippines	—	—	10	—	63	—
5 New Zealand	—	—	—	36	60	30
6 Argentina	—	—	23	—	58	—
7 Scotland	14	28	42	—	53	—
8 Netherlands	25	22	29	46	49	29
9 Denmark	11	10	20	—	49	45
10 Egypt	—	—	11	—	48	—
11 Chile	—	—	14	27	48	—
12 W. Germany	—	—	22	—	48	36
13 Venezuela	—	—	8	—	47	—
14 USA	4	10	24	35	47	42
15 Italy	—	—	13	26	47	—
16 Columbia	—	—	7	—	—	—
17 Spain	10	10	18	—	45	—
18 Canada	—	7	14	—	39	48
19 E. Germany	6	8	23	—	39	—
20 Austria	4	4	12	36	38	43
21 Sweden	3	3	11	20	38	62
22 Hungary	2	5	11	—	38	59
23 France	7	11	21	30	37	48
24 Greece	—	—	9	18	37	—
25 USSR	2	4	7	—	36	—
26 S. Africa	—	—	7	—	35	—
27 Norway	0	4	14	18	35	35
28 Cuba	—	—	29	—	—	48
29 N. Ireland	—	—	—	—	35	—
30 Belgium	9	17	26	26	34	18
31 Ireland	7	9	15	—	32	42
32 Poland	—	—	—	—	32	—
33 Switzerland	1	5(4)	13(10)	25	30	33
34 Finland	—	—	—	14	30	76
35 Mexico	—	—	10	—	30	70
36 S. Korea	—	—	—	—	—	—
37 Brazil	—	—	9	—	27	78
38 Algeria	—	—	6	—	—	—
39 Bulgaria	—	—	5	9	23	—
40 Turkey	—	—	—	10	22	—
41 Yugoslavia	—	—	—	6	19	—
42 Rumania	—	—	11	—	18	—
43 Portugal	10	11	9	13	18	—
44 India	—	—	5	—	15	—
45 Ceylon	—	—	—	—	11	—
46 Congo	—	—	—	—	9	—
47 Burma	—	—	—	—	8	—
48 Pakistan	—	—	—	—	8	—
49 Madagascar	—	—	—	—	8	—
50 Tanganyika	—	—	—	—	3	—
51 Nepal	—	—	—	—	2	—
52 Mozambique	—	—	—	—	2	—

Sources: For 1800, 1850, and 1890 from Weber, 1953, pp. 144-145. For 1960 from United Nations, 1960, pp. 346-368, and 1970, pp. 482-503. For 1970 from Banks, 1971.

34 Table 2. Swiss Population by Size of Community, 1850-1970.

Size of Community	1850	1870	1900	1950	1960	1970
Up to 999	1, 003, 571	999, 607	949, 584	854, 139	806, 054	750, 981
1, 000-1, 999	628, 123	615, 882	640, 179	647, 836	659, 158	646, 666
2, 000- 4, 999	475, 746	579, 746	718, 990	942, 366	1, 022, 572	1, 191, 565
5, 000- 9, 999	131, 103	195, 201	278, 305	550, 594	661, 517	837, 722
10, 000-19, 999	68, 088	94, 232	134, 592	342, 738	646, 912	841, 809
20, 000-49, 999	86, 109	170, 333	210, 265	209, 515	236, 969	584, 351
50, 000-99, 999	-	-	123, 664	195, 462	283, 280	307, 786
100, 000 plus	-	-	259, 864	972, 342	1, 112, 599	1, 108, 903
Total	2, 392, 740	2, 655, 001	3, 315, 443	4, 714, 992	5, 429, 061	6, 269, 783

Source: *Eidgenössische Volkszählung 1970*, Band 12, p. 27.

Table 3. Employment pattern of leading Swiss industries, 1975.

Rank	Classification Number Name	Employment					Non-Farm employ- ment	Workers per estab- lishment	% of persons working in establishments of various sizes			
		1939	1955	1965	1975	1-5			6-499	Over 500		
1	35 Machinery and Vehicles	100, 495	202, 641	262, 751	254, 215	10.0	44.1	2.6	54.4	43.0		
2	40 Building and Construction	n.c.	n.c.	n.c.	225, 503	8.9	12.5	11.0	85.5	3.5		
3	34 Metallurgy, Metal Working	84, 706	135, 039	190, 615	175, 983	6.9	11.9	12.3	75.4	12.3		
4	73 Hotels and Restaurants	122, 622	126, 272	154, 289	158, 500	6.2	5.9	33.3	66.7	-		
5	21-23 Food, Beverages, Tobacco	91, 930	119, 182	128, 140	108, 854	4.3	8.5	23.9	67.8	8.3		
6	66 Banks and Insurance	28, 021	39, 508	62, 847	105, 106	4.1	15.8	7.8	80.1	12.1		
7	81 Public Adm., Defense, Soc. Sec.	n.a.	n.a.	n.a.	89, 008	3.5	11.0	13.2	86.8	-		
8	31 Chemicals	22, 361	40, 948	56, 123	68, 975	2.7	60.5	1.8	45.2	53.0		
9	26 Furniture, Wood Products	54, 551	70, 033	74, 510	64, 319	2.5	6.0	26.1	73.9	-		
10	36 Watches and Jewelry	41, 433	68, 253	80, 872	61, 058	2.4	21.3	5.4	80.3	14.3		
11	28 Printing, Graphic Arts	31, 193	47, 510	55, 552	53, 187	2.1	15.2	9.4	80.1	10.5		
12	25 Clothing	92, 422	93, 822	83, 116	46, 319	1.8	12.4	10.5	83.3	6.2		
13	24 Textiles	68, 884	81, 424	74, 905	43, 341	1.7	35.8	2.6	91.6	5.8		
14	51-52 Energy, Environmental Protection	12, 610	16, 745	19, 332	28, 450	1.1	14.3	8.7	89.2	2.1		
15	33 Stoneware, Earthenware					1.0	15.1					
21-37	All Manufacturing	638, 192	929, 157	1, 092, 331	953, 710	37.6	15.2	9.9	68.5	21.7		
61-94	All Services	n.c.	n.c.	1, 098, 295	1, 324, 120	52.2	6.5	25.2	70.0	4.8		
1-94	All Non-agriculture	1, 224, 071	1, 796, 515	2, 510, 923	2, 537, 735	100.0	8.8	18.2	70.1	11.8		

Note: n.c. means non-comparable.
Source: Bureau fédéral de statistique, *Recensement fédéral des entreprises 1975*, Bern, 1977, pp. 54-87.

Table 4. Share of non-farm employment and average number of workers per plant (by size of community and by employment group in 1975).

	200,000 plus	100,000-199,999	50,000-99,999	20,000-49,999	10,000-19,999	5,000-9,999	2,000-4,999	1,000-1,999	0-999	All Switzerland
All non-farm classes and II & III										
Size of establishment	11.5	10.4	10.9	10.6	10.5	9.3	7.5	6.1	4.5	8.3
All Manufacturing class II (21-39)										
% of employment	28.0	19.8	35.3	36.6	40.4	46.6	47.3	46.8	38.2	37.6
Size of establishment	19.9	13.2	20.8	20.3	21.1	18.7	13.8	10.4	6.8	15.2
Food, drink and tobacco (21-23)										
% of employment	2.4	2.2	3.1	3.9	4.2	5.4	5.8	7.1	5.8	4.3
Size of establishment	14.8	8.4	11.6	12.1	12.3	10.8	7.7	6.3	3.9	8.5
Textiles and clothing (24-25)										
% of employment	1.5	0.8	3.0	2.3	3.0	5.7	6.3	5.0	4.5	3.5
Size of establishment	8.5	4.8	17.1	20.0	21.2	25.9	24.1	18.1	17.1	18.2
Metals and machines (34-35)										
% of employment	11.2	9.6	19.1	18.1	21.3	21.0	20.6	16.9	13.0	16.9
Size of establishment	24.8	23.6	36.2	30.4	30.3	24.1	17.4	11.5	8.2	20.9
Construction (40)										
% of employment	6.2	6.6	7.2	9.0	8.2	8.7	11.2	12.5	13.7	8.9
Size of establishment	18.3	21.5	17.6	20.4	14.5	11.9	10.4	8.8	7.6	12.5
Services, class III (61-94)										
% of employment	65.0	72.1	56.3	53.0	50.0	43.6	40.1	38.9	45.8	52.2
Size of establishment	9.4	9.3	8.0	7.4	7.2	5.8	6.4	3.8	3.1	6.5
Trade (61-65)										
% of employment	18.0	16.8	16.2	14.1	14.2	12.6	10.3	9.0	9.5	13.5
Size of establishment	7.8	6.6	6.7	5.9	6.2	5.1	3.9	3.4	2.9	5.5
Banks and insurance (66)										
% of employment	9.2	8.2	5.3	5.2	2.7	2.2	1.0	0.5	0.3	4.1
Size of establishment	37.8	29.5	23.6	17.9	10.8	7.6	3.6	2.0	1.3	15.8
Hotels and restaurants (73)										
% of employment	5.2	3.9	5.1	4.8	4.3	4.6	8.0	9.5	13.2	6.2
Size of establishment	11.3	9.5	7.8	6.8	5.9	5.3	5.6	4.8	3.8	5.9

Source: Bureau fédéral de statistique, Recensement fédéral des entreprises 1975, calculated from unpublished Table No. 1.04.

Table 5. Share of manufacturing workforce by size of plant and by size of community, 1975.

Size of Community	Number of workers per plant	1-6	6-9	10-19	20-49	50-99	100-199	200-499	500-999	over 1,000
	A	B	C	D	E	F	G	H	I	J
200,000 plus	19.9	7.3	4.3	7.5	15.6	9.4	10.3	11.9	6.6	31.6
100,000-199,000	13.2	11.0	6.1	10.6	14.3	12.0	10.2	11.2	14.9	9.8
50,000-99,000	20.8	6.7	4.5	8.6	12.2	11.7	14.7	11.8	3.4	26.5
20,000-49,000	20.3	6.6	5.1	8.8	13.8	10.3	11.4	15.0	8.5	20.6
10,000-19,999	21.1	6.4	4.8	8.1	13.0	10.5	13.4	17.1	8.6	18.1
5,000-9,999	18.7	7.5	5.3	9.1	12.2	12.9	14.5	17.7	9.9	10.8
2,000-4,999	13.8	10.8	6.8	9.3	13.6	13.5	18.5	16.0	7.2	6.3
1,000-1,999	10.4	15.8	8.0	10.2	17.3	12.6	13.6	12.6	8.5	1.2
Up to 999	6.8	25.2	9.1	11.3	18.1	14.8	13.2	8.2	-	-
All Switzerland	15.2	9.9	5.9	9.1	13.6	11.9	13.4	14.6	7.8	13.9

Source: Eidgenössisches Statistisches Amt, *Eidgenössische Betriebszählung 1975*.

Calculated from unpublished Table No. 1.04. The figure 7.3 in the first row of column B means that 7.3 percent of the manufacturing workforce in cities with over 200,000 inhabitants works in plants with from one to six employees.

Table 6. Share of non-farm employment and number of workers per establishment by industrial and service category and by small, medium and large communities in 1975.

Class number et name	All Switzerland		Small communities (1-999)		Medium communities (10,000-19,999)		Large communities (100,000-199,999)	
	% of non-farm employment	Workers per establishment	% of non-farm employment	Workers per establishment	% of non-farm employment	Workers per establishment	% of non-farm employment	Workers per establishment
II (11-52) Industry and construction	47.8	14.5	54.2	7.0	49.9	19.5	27.9	15.2
21-23 Food, drink and tobacco	4.3	8.5	5.8	3.9	4.2	12.3	2.2	8.4
24 Textiles	1.7	35.8	2.1	29.7	1.4	39.5	0.1	9.6
25 Clothing	1.8	12.4	2.4	12.4	1.6	15.1	0.8	4.7
26 Furniture, wood products	2.5	6.0	6.2	4.2	1.9	6.9	0.8	4.5
27 Paper	0.6	53.8	0.1	13.8	0.4	28.8	0.1	21.3
28 Printing, graphic arts	2.1	15.2	0.5	10.6	2.0	14.5	3.2	17.9
29 Plastic, rubber, leather products	0.9	11.9	1.0	5.6	1.3	24.3	0.1	4.0
31 Chemicals	2.7	60.5	1.6	27.9	3.3	65.8	0.7	27.2
33 Stoneware, earthenware	1.0	15.1	2.0	12.5	1.0	16.3	0.3	11.7
34 Metallurgy, metalworking	6.9	11.9	7.0	5.5	7.0	14.8	3.5	12.3
35 Machinery, vehicles	10.0	44.1	6.0	19.2	14.4	61.9	6.1	50.7
36 Watches, jewelry	2.4	21.3	3.1	14.9	1.5	24.5	1.2	12.8
37 Other manufactures	0.5	6.4	1.5	5.1	0.5	5.7	0.4	4.1
40 Building, construction	8.9	12.5	13.7	7.6	8.2	14.5	6.6	21.5
51-52 Energy, environmental protection	1.1	14.3	1.2	7.0	1.2	18.8	1.5	45.4
III (61-94) Services	52.2	6.5	45.8	3.1	50.0	7.2	72.1	9.3
61-63 Wholesale and commission trade	4.8	8.7	3.0	5.3	4.9	10.2	5.6	8.7
64-65 Retail trade	9.0	4.6	6.5	2.4	9.4	5.1	11.3	5.8
66 Banks, insurance	4.1	15.8	0.3	1.5	2.7	10.8	8.2	29.6
71 Transportation, shipping	4.7	10.1	3.6	3.5	6.6	16.8	4.5	14.0
72 Post, telephone, communications	2.0	12.2	1.7	1.4	1.6	31.8	4.2	69.2
73 Hotels, restaurants	6.2	5.9	13.2	3.8	4.3	5.9	5.9	9.5
81 Public administration, defense, soc.	3.5	11.0	2.4	3.0	3.5	11.4	7.3	31.6
83 Education	3.4	6.5	3.9	2.5	3.0	7.3	4.3	14.5
85 Health care, funerals	4.6	10.0	3.2	15.6	5.0	10.3	7.1	10.0
86 Social work	0.9	9.5	1.3	9.8	0.8	8.5	1.1	11.9
88 Consultants, business services	3.6	5.0	0.9	2.8	3.2	5.0	6.6	6.1
89 Culture, sport, leisure	0.7	3.7	0.4	2.0	0.3	2.1	1.4	6.5
91 Cleaning	0.5	3.3	0.2	2.5	0.5	3.4	0.6	3.3
92 Repairs	1.9	3.9	3.2	2.9	1.9	4.7	1.3	3.9
67, 84, 87, 94 Other services	2.3	3.1	1.2	1.3	2.5	4.2	2.8	3.6
II plus III All non-farm	100.0	8.8	100.0	4.5	100.0	10.5	100.0	10.4

Source: Eidgenössisches Amt, *Eidgenössische Betriebszählung 1975*. Calculated from unpublished Table No. 1.02.

Table 7. Employment patterns of leading industries compared by small and medium sized communities in 1975.

Class Name of Industry or Service	All Switzerland						Communities less than 1, 000						Communities 10, 000-19, 999						Class
	Rank	% of non-farm employment	Number of workers per establishment	Share of workforce in establishments of size	Rank	% of non-farm employment	Number of workers per establishment	Share of workforce in establishments of size	Rank	% of non-farm employment	Number of workers per establishment	Share of workforce in establishments of size	Rank	% of non-farm employment	Number of workers per establishment	Share of workforce in establishments of size			
																	1-5	over 500	
35 Machinery and vehicles	1	10.0	44.1	2.6	43.0	5	6.0	19.2	6.3	1	14.4	61.9	1.7	48.8	35				
40 Building and construction	2	8.9	12.5	11.0	3.5	1	13.7	7.6	20.2	2	8.2	14.5	8.9	40					
34 Metallurgy, metal working	3	6.9	11.9	12.3	12.3	3	7.0	5.5	30.8	3	7.0	14.8	8.2	34					
73 Hotels and restaurants	4	6.2	5.9	33.3	-	2	13.2	3.8	54.8	4	4.3	5.9	33.5	73					
21-23 Food, beverages, tobacco	5	4.3	8.5	23.9	8.3	6	5.8	3.9	66.3	5	4.2	12.3	14.7	21-23					
66 Banks and insurance	6	4.1	15.8	7.8	12.1	15	0.3	1.5	84.4	8	2.7	10.8	11.5	66					
81 Public adm., defense, soc. sec.	7	3.5	11.0	13.2	-	9	2.4	3.0	56.4	6	3.5	11.4	11.9	81					
31 Chemicals	8	2.7	60.5	1.8	53.0	12	1.6	27.9	4.0	7	3.3	65.8	1.4	47.2	31				
26 Furniture, wood products	9	2.5	6.0	26.1	-	4	6.2	4.2	40.1	10	1.9	6.9	20.5	26					
36 Watches and jewelry	10	2.4	21.3	5.4	14.3	7	3.1	14.9	7.7	12	1.5	24.5	4.8	13.3	36				
28 Printing, graphic arts	11	2.1	15.2	9.4	10.5	14	0.5	10.6	12.6	9	2.0	14.5	10.1	28					
25 Clothing	12	1.8	12.4	10.5	6.2	8	2.4	12.4	9.4	11	1.6	15.1	8.5	25					
24 Textiles	13	1.7	35.8	2.6	5.8	10	2.1	29.7	3.5	13	1.4	39.5	1.9	24					
51-52 Energy, environmental protection	14	1.1	14.3	8.7	2.1	13	1.2	7.0	19.9	14	1.2	18.8	6.2	51-52					
33 Stoneware, ceramics	15	1.0	15.1	8.6	9.9	11	2.0	12.5	11.2	15	1.0	16.3	9.4	33					

Source: Data for all Switzerland from Bureau fédéral de statistique, *Recensement fédéral des entreprises 1975*, pp. 54-87. Data for small and medium-sized communities from same census, unpublished Table No 1.02.

Table 8. Leading employer groups more important in small towns than elsewhere (share of non-farm employment in %).

Class	Name of industry or service	Communes 0-999	All Switzerland	Communes 10, 000- 19, 999	Communes 100, 000- 199, 999
40	Building and construction	13.7	8.9	8.2	6.6
73	Hotels and restaurants	13.2	6.2	4.3	5.9
26	Furniture and wood products	6.2	2.5	1.9	0.8
21-23	Food, beverages, tobacco	5.8	4.3	4.2	2.2
36	Watches and jewelry	3.1	2.4	1.5	1.2
25	Clothing	2.4	1.8	1.6	0.8
33	Stone and earth products	2.0	1.0	1.0	0.3
11, 12, 32, 37	Other industries	1.5	0.5	0.5	0.4

Source: Data for all Switzerland from Bureau fédéral de statistique, *Recensement fédéral des entreprises 1975*, pp. 54-87. Data for small and medium-sized communities from same census, unpublished Table No. 1.02.

Table 9. Leading employer groups more important in middle-sized cities than elsewhere.

Class	Name of industry or service	Communes 10, 000- 19, 999	All Switzerland	Communes 0-999	Communes 100, 000- 199, 999
35	Machinery and vehicles	14.4	10.0	6.0	6.1
34	Metallurgy, metal working	7.0	6.9	7.0	3.5
31	Chemicals	3.3	2.7	1.6	0.7
29	Plastics, rubber, leather products	1.3	0.9	1.0	0.1

Source: Data for all Switzerland from Bureau federal de statistique, *Recensement fédéral des entreprises 1975*, pp. 54-87. Data for small and medium-sizes communities from same census, unpublished Table No. 1.02.

Modernization without urbanization

Table 10. Employment pattern of leading employers in cities with from 10, 000 to 199, 999 inhabitants.

Class	Name of Industry or Service	Communes 100, 000- 199, 999	All Switzerland	Communes 0-999	Communes 10, 000- 19, 999
<i>Conventional Leading Employers</i>					
66	Banks and insurance	8.2	4.1	0.3	2.7
81	Public administration, defense, social security	7.3	3.5	2.4	3.5
40	Building and construction	6.6	8.9	13.7	8.2
35	Machinery and vehicles	6.1	10.0	6.0	14.4
73	Hotels and restaurants	5.9	6.2	13.2	4.3
34	Metallurgy and Metal working	3.5	6.9	7.0	7.0
28	Printing and graphic arts	3.2	2.1	0.5	2.0
21-23	Food, drink and tobacco	2.2	4.3	5.8	4.2
51-52	Energy and environmental protection	1.5	1.1	1.2	1.2
36	Watches and jewelry	1.2	2.4	3.1	1.5
<i>New Leading Employers</i>					
64-65	Retail trade	11.3	9.0	6.5	9.4
85	Medicine and health care	7.1	4.6	3.2	5.0
88	Consultants, business services	6.6	3.6	0.9	3.2
61-63	Wholesale and commission trade	5.6	4.8	3.0	4.9
83	Education	4.3	3.4	3.9	3.0

Source: Data for all Switzerland from Bureau fédéral de statistique, *Recensement fédéral des entreprises 1975*, pp. 54-87. Data for small and medium-sized communities from same census, unpublished Table No 1.02.

Table 11. Minimum and maximum rates of cantonal and communal taxes for a corporation regularly engaged in trade or business in Switzerland (rates effective in 1963).

Location	Profits tax		Capital tax	
	minimum %	maximum %	minimum %	maximum %
Basel	3	23	0.5	0.5
Bern	8.2	20.5	0.3075*	0.615**
Fribourg	6.75	18	0.3	0.3
Genève	6.48	32.40	0.343	0.343
Lausanne	4.68	25	0.468	0.468
Zug	6.45	12.9	0.645	0.645
Zurich	4.3	21.5	0.3225	0.3225

*If paid-in capital and reserves are less than sFr. 100, 000.

**If paid-in capital and reserves are more than sFr. 1, 000, 000.

Source: Allegemeine Treuhand A.G., *Conducting Business in Switzerland*, Geneva, 1964, p. 283.

Table 12. Birth rate, death-rate and net growth (per thousand) of native Swiss and foreign population, 1950-1973.

Year	Birth rate		Death rate		Growth rate	
	Swiss	Foreign	Swiss	Foreign	Swiss	Foreign
1950	18.6	9.8	10.1	10.6	8.5	-0.8
1960	17.2	21.2	10.1	6.3	7.1	14.9
1965	16.4	31.9	10.3	4.3	6.1	27.6
1966	16.0	30.9	10.3	4.2	5.7	26.7
1967	15.3	30.6	10.1	4.0	5.2	26.6
1968	14.8	29.3	10.4	3.9	4.4	25.4
1969	14.1	28.2	10.2	3.8	3.9	24.4
1970	13.4	27.3	10.2	3.7	3.2	23.6
1971	13.0	25.8	10.4	3.5	2.6	22.3
1972	12.1	24.2	10.1	3.2	2.0	21.0
1973	11.5	22.9	10.1	3.2	1.4	19.7

Source : Evolution de la population et du potentiel de travail de la Suisse, *La vie économique*, June 1974, p. 346.

Table 13. Births, deaths and net growth of Swiss and foreign population, 1950-1977.

Year	Live births		Deaths		Net growth		Total
	Swiss	Foreign	Swiss	Foreign	Swiss	Foreign	
1950	81,987	2,789	44,358	3,014	37,629	225	37,404
1951	79,161	2,742	44,884	3,068	32,227	326	31,951
1952	80,375	3,174	44,508	3,116	35,867	58	35,925
1953	79,633	3,396	46,555	3,129	33,078	267	33,345
1954	79,928	3,813	46,272	2,841	33,656	972	34,628
1955	80,799	4,532	47,276	3,090	33,523	1,442	34,965
1956	82,261	5,651	48,427	3,146	33,834	2,505	36,339
1957	83,232	7,591	47,767	3,299	35,465	4,292	39,757
1958	82,783	8,638	46,164	3,117	36,619	5,521	42,140
1959	83,096	9,877	46,933	3,144	36,163	6,733	42,896
1960	83,005	11,367	48,690	3,404	34,315	7,963	42,278
1961	84,318	14,920	47,625	3,379	36,693	11,541	48,234
1962	84,617	19,705	51,268	3,857	33,349	15,848	49,197
1963	86,067	23,926	53,047	3,942	33,020	19,984	53,004
1964	85,720	27,170	49,640	3,969	36,080	23,201	59,281
1965	82,715	29,120	51,584	3,963	31,131	25,157	56,288
1966	80,902	28,836	51,914	3,890	28,988	24,946	53,934
1967	77,826	29,591	51,234	3,908	26,592	25,683	52,275
1968	75,656	29,474	53,417	3,957	22,239	25,517	47,756
1969	72,659	29,861	54,007	3,995	18,652	25,866	44,518
1970	69,529	29,687	53,084	4,007	16,445	25,680	42,125
1971	67,384	28,877	53,889	3,967	13,495	24,910	38,405
1972	63,310	28,032	52,728	3,761	10,582	24,271	34,853
1973	60,282	27,111	52,969	3,809	7,313	23,302	30,615
1974	57,953	26,554	52,528	3,875	5,425	22,679	28,104
1975	55,297	23,167	52,201	3,723	3,096	19,444	22,540
1976	54,628	19,571	53,489	3,606	1,139	15,965	17,104

Source : Evolution de la population et du potentiel de travail de la Suisse, *La vie économique*, June 1974, p. 346 and *Statistisches Jahrbuch der Schweiz*, 1977, p. 37.