CHAPTER 7. SWEDISH INSURANCE INSTITUTIONS AND EFFICIENCY 1920-1980

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INTRODUCTION

This chapter addresses two intimately related fields of research. The first regards the literature on the relation between institutional change and market conditions, while the second regards the effects of market regulation on market efficiency. We place our focus on the conditions of the insurance market in 1920-1980 but focus on post-war Sweden. Insurance played a key role in the compensatory systems that developed in close relation to the Swedish welfare policies after World War Two.[323] From a public perspective, attaining economies of scale in insurance was considered a prerequisite for ensuring the efficiency and stability of the insurance market. For this purpose, from the 1930s onward, new regulations were introduced successively. Eventually, the insurance industry became both protected and concentrated and during the mid-1960s it developed distinctive features of an oligopoly market. As a result, a number of insurance companies were reorganised into a few large and financially strong business groups. The impact of this increase in market concentration on the efficiency of the insurance industry is, however, unclear. On the one hand, improved economies of scale have been regarded as one of the factors behind the remarkable post-war economic boom, especially in small and late industrialised countries like Sweden. On the other hand, according to the industrial organisation literature, oligopoly markets have been associated with numerous problems, such as low cost-efficiency in production and services, rent-seeking strategies,

[323] Lundberg (1985); Baldwin (1990); Larsson, Lönnborg and Svärd (2005), p. 57; Lönnborg and Olsson (2010); Esping-Andersen (1985); Katzenstein (1985); Dixit (1996).

misallocation problems and so on, which might well entail market inefficiencies.[324] Problems of this sort did, eventually, become one of the main arguments for the wave of market deregulations in Sweden after the 1980s.

From the 1930s to the 1980s, the institutional environment for Swedish insurance was drastically altered by rigorous changes in market regulation. In this chapter we provide new empirical evidence on the impact of these institutional changes on the market structure, efficiency and profitability of the Swedish insurance industry. The empirical analysis is presented more closely below, in section III. In section II, the regulation of the Swedish insurance market is outlined in brief before the analyses are presented. In section IV, we look more closely at the difference between joint-stock and mutual insurers and in section V, we conclude the chapter.

THE CHANGING POLICIES AND THE REGULATION OF THE INSURANCE MARKET

One of the guiding principles of the overall post-war policies in Sweden was to avoid conversion problems and cyclical fluctuations and to organise the economy in accordance with the Keynesian policy goal of full employment. Fiscal instruments and structural rationalisation were considered to be efficient policy tools. Accordingly, market concentration became an important post-war feature. Increasing ownership concentration, especially within the Swedish bank groups, encouraged the channelling of investments as well as the clustering of companies that aimed for a strategy of mergers and structural rationalisation in order to improve efficiency. According to Schön, this was part of the explanation behind the extraordinarily fast growth rates in Sweden during the post-war years.[325]

In this chapter we place special focus on the insurance market regulation that was introduced in 1948 and onwards, and that sought to ensure that the insurance

[324] See, for instance, chapters 1 and 2 in Baumol (1986); Vives (2001); Scherer and Ross (1990); Feenstra and Levinsohn (1989); Dixit and Stiglitz (1977); Nishimura and Ogawa (2002); pp. 185-190; Childs (1936); Child (1980); Notermans (1998); Forsyth and Notermans (1997).

[325] Schön (2010); Rothstein (1996); Hägg (1998); Hadenius (1999); Landes (2003).

market functioned in accordance with the official policy objectives. Even though the regulatory regime shift began already during the 1930s, in order to coordinate domestic interstate policies in concert with the low fixed interest rate policy principles, the real watershed occurred after the war. From 1948 and onward, market regulation was successively extended, drawing on six basic policy principles in the insurance market which became instructions for the Insurance Inspectorate (*Försäkringsinspektionen)*, namely the 'principle of solvency', the 'principle of equity', the 'principle of need', the 'principle of separation' (between life and non-life operations), the 'principle of insured's influence' and the 'principle that an insurer could only conduct insurance business'.[326] Several novelties were incorporated in the new legislation. The 'principle of need' meant that a company was obligated to demonstrate an actual need in order to receive a license to enter the market. This principle, which raised the barriers to entry, gave the supervising authority, e.g. the Insurance Inspectorate, the power to determine the structure of the market. In reality, this protected the incumbent insurance companies from competition from new companies, while the remaining companies expanded horizontally and vertically. During the first ten years of the new legislation, not a single new company was established in the life insurance field, since the Insurance Inspectorate considered the market to be in equilibrium. Even when non-life insurance companies did get a concession, it was mainly to enable combination insurance as a measure for improving market efficiency.[327]

The so-called 'principle of equity (fairness)' only applied to life insurance companies when it was introduced in 1948 (a decade later a softer version was introduced for non-life insurers). The purpose of this principle was to protect customers from paying too high premiums. The 'principle of equity' primarily aimed at underlining how the government gave priority to constant cost reductions among private companies. However, the principle was also a way of sustaining artificial competition and counteracting cartel agreements on the market, which reduced competition.[328] While the 'principle of equity' was a typical institutional device for

326 Jungerhem and Larsson (2013); Bergström *et al.* (1994); Private Insurers in Sweden (1954).

327 Statens Offentliga Utredningar (1946): 34, (1949): 25, and (1983): 5, pp. 75-77; Larsson and Lönnborg (2016).

328 Grip (1991).

Sweden, the Insurance Inspectorate never defined the term 'equity' (fairness) in any proper way, and it was therefore dependent on subjective judgements of the Inspectorate. By referring to the 'principle of equity', the Insurance Inspectorate gathered information about how the costs developed for different companies, which were published continuously in the annual official statistics. This open publication was considered as a means of keeping the premiums down and underpinning a constant rationalisation among companies.[329]

Another feature was the so-called 'principle of mutuality', which in practice meant that the profits in every life insurance company – regardless of ownership structure – were to be returned to the policyholders. However, this was not a formal rule; rather it was inspired by previous traditions on the market. Fierce competition on the life insurance market before World War II induced a development where most of the profits were returned to policyholders. However, as a part of the 'principle of equity', the 'principle of mutuality' meant an informal ban on dividends among life insurance companies, and thus even joint stock corporations were forced into acting as mutual insurers. Eventually it was suggested that the 'principle of equity' should also apply to non-life companies, and this was duly implemented through an amendment to the law in 1950.[330] The wish to ban dividends among life insurers was supported by the so-called "principle of separation", which stipulated that the life operations of mixed companies must be transferred to a separate company, either existing or newly founded, without any compensation to the shareholders.

The 1945 state commission, that investigated whether the life insurance industry should be nationalized and also suggested new legislation for the entire industry, supported the idea of strengthening the position for those insured in managing the companies that insured them.[331] The influence of the insurance co-operative idea was to become one of the cornerstones in building mutual companies. The commission wanted this influence to increase and was willing to give priority to the founding of mutual enterprises. The commission was also in favour of

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329 Larsson *et al.* (2005), pp. 75-76.

330 Grip (1987); Lewin (1967).

331 Statens Offentliga Utredningar (1949): 25.

representation for the insured and in 1951 a new law was passed that guaranteed representation on the board for policyholders in both mutual and joint stock companies.[332]

The insurance companies were not particularly supportive of regulations that limited their freedom of action. At the same time, however, the changing policy occurred against a backdrop of threats of even stricter regulations – and in the worst case nationalization – a threat that some recognised as very real. However, not all rules in the new law were negative for all companies, especially not for the larger corporations. One particular objective of the law was to make the market more efficient through mergers. It was argued that larger companies could more easily implement effective routines and develop new low cost insurance products. The larger companies gained an advantage mainly because the threshold of entering the market was raised (the market considered the 'principle of need' in the new legislation as a pretty effective barrier to entry) and because of a rising minimum efficient scale due to, for instance, the "principle of solvency".[333]

In sum, the new legislation departed from international standards and considerably constrained private insurers regarding, for instance, entry into the market, setting premiums and making profits on life insurance, while also relaxing the previously existing rule that every different non-life insurance branch had to be organised as one specific company. The intention was to facilitate higher efficiency and, as a consequence, a market concentration process commenced.

The empirical analyses

In the following, we examine the insurance market in Sweden between 1920-1980 with regard to its structure and composition. In 1920, the first year of our time period, the structure of the Swedish insurance market was relatively dispersed, consisting of a large number of companies, joint stock and mutual, with different kinds of operations nationwide (and indeed international), as well as at the

332 Larsson and Lönnborg (2015).

333 Larsson, Lönnborg and Svärd (2011).

regional or county/parish level. In table 7.1 below, the total number of private insurers in Sweden is shown for ten-year intervals between 1920 and 1980, for four subgroups of companies. The number of companies declined across the four groups in general, but there was a considerable variation between the groups. The reduction in the number of companies between 1920 and 1980 ranges from 33 per cent in the case of joint-stock life insurers, to close to 70 per cent in the case of mutual non-life insurance companies. For both groups of mutual insurers as well as for the joint-stock life group, there was a long-run trend towards a reduction in the number of companies throughout the examined period, which seems to have accelerated in the 1950s and 1960s. The concentration process of joint-stock non-life companies, on the other hand, seems to primarily have taken place in the 1960s. All in all, the number of companies in the industry was reduced from 115 in 1920 to 46 in 1980, or a reduction of 60 per cent, with two thirds of this reduction occurring in the 1950s and 1960s.

Table 7.1. The Structure of the Swedish Insurance Market: Number of Insurers, 1920-1980

		1920	1930	1940	1950	1960	1970	1980
Joint stock	Life	9	7	7	5	5	4	6
	Non-life	35	31	32	34	31	16	16
Mutual	Life	17	14	12	13	10	8	7
	Non-life	54	52	47	39	32	20	17
Total		115	104	98	91	78	48	46

Source: *Official Statistics of Sweden, Private Insurance Companies,* 1920-1980.

Figure 7.1 below displays the development of the level of market concentration within the Swedish insurance industry for the same four groups of companies. The level of market concentration has been measured in the form of a Hirschman-Herfindahl index (HHI), using data on the total turnover for all Swedish insurance companies in the period 1920-1980. The HHI is calculated by taking the sum of the squares of the market shares of all firms within an industry, yielding a ratio that may vary from 0 to 1.0, where values close to 0 indicate low levels of market concentration, while values close to 1 indicate high levels of market concentration. An index value of >0.25 is commonly interpreted as signifying a highly concentrated market. Looking at figure 7.1, the patterns are roughly similar across the four groups, with low to moderate levels of market concentration prevailing for most of the period, followed by a significant rise in the HHI after 1948, when the regulatory shift began. When the regulation was extended, the market concentration increased. This was especially distinctive during the 1950s and 1960s, when the HHI rose up to levels representing highly concentrated markets. The group mutual non-life companies stood out somewhat from the other groups in several respects. It was the only group for which a clear downward trend in the level of market concentration is discernible during the early part of the period; from the 1920s up to the early 1940s.[334] During the latter part of the period, the HHI for mutual non-life companies was characterised by a steady upward trend, but it did not exhibit the same sharp upward shifts as did the other groups, nor did it rise to the same high levels as the HHI of the other groups. Finally, in the case of joint-stock (life and non-life), as well as mutual life insurance companies, there was a clear trend towards a lower market concentration taking place from the early to mid 1970s, while no such trend is discernible for mutual non-life companies.

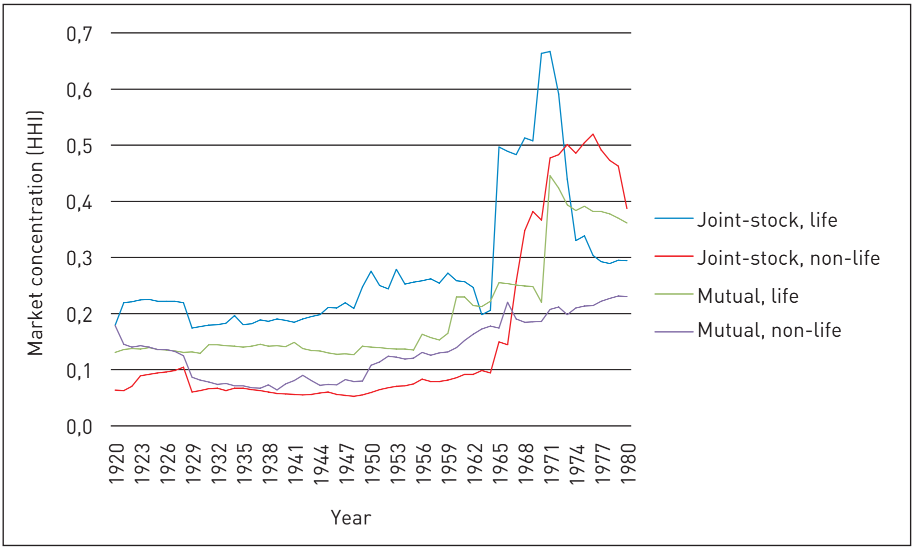
The sharp upward shift in the HHI for joint-stock companies during the mid to late 1960s was mainly due to a series of mergers initiated by the rapid expansion strategies of Skandia, which increased its market share of the non-life segment from nine per cent in 1964 to just under 20 per cent in 1965 and over 40 per cent in the mid 1970s. The sharp rise in the HHI of mutual life insurance companies between 1970 and 1971 was caused by the merger between Trygg and Hansa, which left the merged company with a share of the Swedish life insurance market of around 34 per cent.[335] The subsequent downward trend of the HHI during the 1970's, in the case of joint-stock and mutual life insurance companies, was not primarily the result of new entry into the industry, but was mainly due to the convergence of market shares between incumbent companies. Overall, there were very few new entrants into this industry from the 1950s onwards, and it then mainly concerned reinsurance companies.[336]

[334] Lundberg and Molén (1958).

[335] Englund (1982); Kuuse and Olsson (2000); Fredrikson *et al*. (1972).

[336] Larsson and Lönnborg (2009); Larsson and Lönnborg (2014); Kader *et al.* (2010).

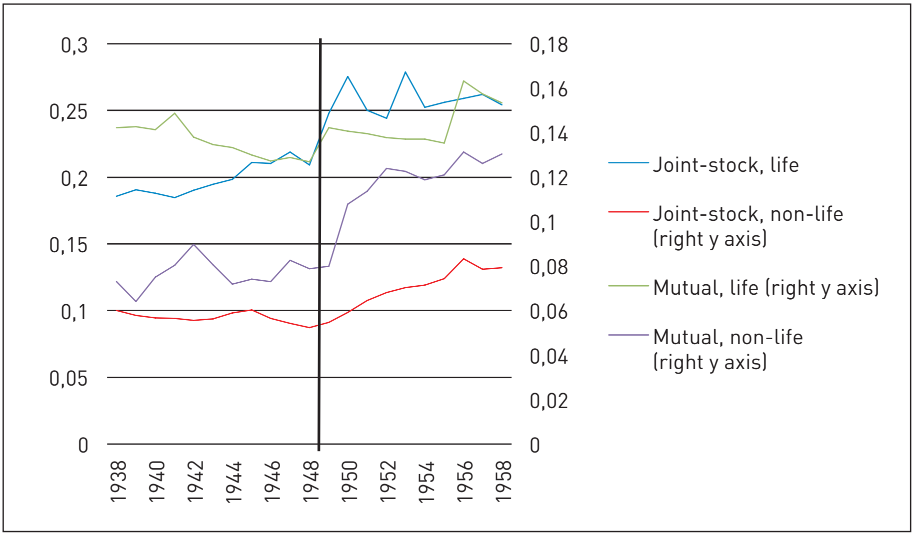
Figure 7.1. Hirschman-Herfindahl Index of Market Concentration, Swedish Insurers, 1920-1980



Source: *Sweden Public Statistics, Private Insurance Companies, 1921-1980.*

While not readily discernible in figure 7.1, there are signs of a shift in the level and/or trend of the HHI series in 1949/50, which can more easily be seen in figure 7.2 below. In the case of joint-stock life insurers, there was a weak trend towards increased market concentration from the late 1920s up to 1948, when the level of concentration increased significantly, which is displayed as a significant level shift in the HHI. The trend then continued up to a brief slump in the early 1960s, before the major concentration phase commenced in the mid 1960s. A similar level shift could be observed in the case of mutual life insurance companies. For non-life companies (joint-stock and mutual), there was an apparent shift in the trend of the HHI series from 1949 and 1950, respectively. These findings would seem consistent with the view that the regime shift, beginning with the introduction of the law of 1948, served to increase the level of market concentration in the Swedish insurance industry.

Figure 7.2. Hirschman-Herfindahl Index of Market Concentration, Swedish Insurers, 1938-1958



Source: *Sweden Public Statistics, Private Insurance Companies, 1921-1980*.

To formally test whether the Swedish insurance law of 1948 did, in fact, have an impact on the market structure of the insurance industry, we performed an interrupted time series analysis in the form of a panel regression. To estimate the effect of the 1948 law on market concentration (HHI), we included a dichotomous dummy variable (Law 1948 level) scored 0 for each year before 1948 and 1 for 1948 and after, as well as a dummy variable counter (Law 1948 trend), scored 0 for each year before 1948 and 1, 2, 3... for 1948 and after, and a simple time trend variable (baseline trend). These variables were included to capture a possible shift in the level (mean) and/or trend (slope) of the regression line from 1948 onwards. We used the natural log of total turnover for each of the four groups of companies as one control variable (ln Market size), and the average annual wage level in the Swedish insurance industry (ln Wages) as another control variable.[337] To control for endogeneity, we used fixed effects and included dummy variables for the

[337] Both control variables were expressed in real prices (1948=100). Data on total turnover was taken from Official Statistics of Sweden, Private Insurance Companies, 1920-1980, and data on wages was taken from Official Statistics of Sweden, Yearbook of Wage Statistics in Sweden, 1920-1980.

joint-stock life, joint-stock non-life and mutual life groups. The results, which can be seen in table 7.2 below, indicate that the law of 1948 did indeed have an impact on the market structure of the Swedish insurance industry, contributing to an increase in the market concentration (HHI) of around four per cent per annum from 1948 onwards. The OLS estimation tested positive for serial correlation and, for this reason, we also estimated the regression after having transformed all continuous variables using the obtained serial correlation coefficient. These results can be seen under the column GLS. This procedure removed the serial correlation, but left the Law 1948 trend variable statistically significant. There is thus a clear shift in the regression line from 1948 onwards, indicating that the law of 1948 did indeed contribute to the rise in market concentration in the Swedish insurance industry between 1948 and 1980.

Table 7.2. Regression Results: Market Concentration, Swedish Insurers, 1920-1980

	OLS	GLS
Ln real wages	0.55**	0.16
	(2.37)	(0.82)
Ln market size	-0.14**	0.05
	(-2.37)	(1.12)
Baseline trend	-0.01***	-0.01
	(-4.06)	(-0.54)
Law 1948 level	0.03	0.04
	(0.38)	(1.22)
Law 1948 trend	0.05***	0.04**
	(5.04)	(2.02)
Adj R^2	0.80	0.27
D-W	0.26***	1.81
N	244	240

*** Sig. at 1 % level ** Sig. at 5 % level * Sig. at 10 % level.

The insurance law of 1948 thus managed to accomplish one of its main objectives, i.e. creating a more concentrated Swedish market for insurance. As mentioned above, attaining economies of scale in insurance was considered by Swedish policy makers to be a prerequisite for ensuring the efficiency and stability of the market. Larger companies, it was argued, could more easily implement cost-effective routines and develop new low cost insurance products. For this reason, Swedish policy makers pursued a policy of structural rationalisation which aimed at reducing the number of active insurance companies and concentrating market shares as a means of attaining economies of scale. To ensure that the expected rise in productive efficiency was not simply absorbed by the remaining companies – through rising profit margins – the so–called 'principle of equity', referenced above, was introduced in order to keep premiums at a level that was considered 'fair'. These policies were, in combination, expected to maximize consumer welfare by enabling companies to provide better services at lower costs.[338]

Next we analyse the development of efficiency within the Swedish insurance industry over time, in an attempt to answer whether the 1948 insurance law did, in fact, accomplish the twin objectives of improving efficiency and maximizing consumer welfare. We use a simple partial productivity measure as a proxy for efficiency, with the sum of insurance claims paid and bonuses allocated to policyholders as output and the sum of administration expenses and net premium income as input.[339] However, it is important to note that this ratio is not only intended to measure the development of the productivity or the cost-efficiency of Swedish insurance companies. Rather, what we want to test is to what extent Swedish insurance companies became more cost-efficient as a result of the regulations that were introduced from 1948 onwards, *and* to what extent this improvement in cost-efficiency benefitted the average Swedish consumer of insurance, in the form of reduced prices (i.e. the effect that was anticipated by Swedish policy makers). If Swedish insurance companies did, in fact, become more cost-efficient after 1948, in the sense that more individual risk could be managed and redistributed using less input, and assuming that this improvement in cost-efficiency was not simply absorbed by rising profit margins, this should have caused our measure of efficiency to rise.

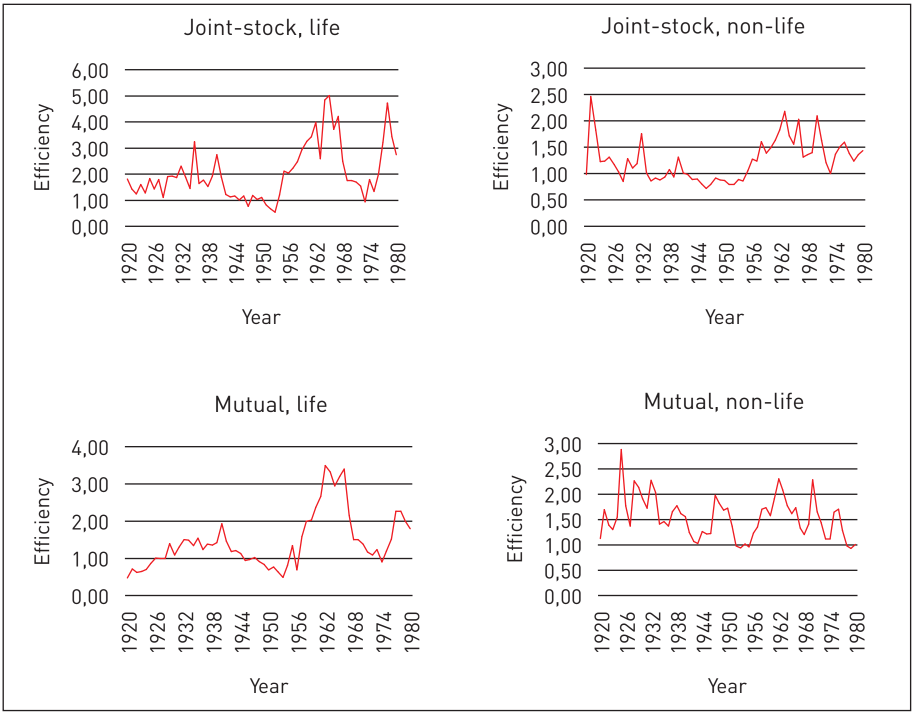
Figure 7.3 below shows the evolution of our measure of efficiency, for the same four groups of companies as before. Looking at figure 7.3, there are strong

338 Larsson *et al.* (2005); Adams *et al.* (2012); Larsson (1998); Pearson and Lönnborg (2008); Allen and Lueck (1995).

339 Net premium income is defined as premium income less insurance claims paid, bonuses to policyholders and administration expenses. Reinsurance claims and payments have been deducted from the calculations.

indications that the efficiency of Swedish insurers did, in fact, improve following the implementation of the 1948 law. In the case of joint-stock insurers and mutual life insurers, there is a sharp improvement in efficiency from the early 1950s to the mid 1960s. After around 1965, the efficiency starts to deteriorate, but once again improves from the early 1970s in the case of life insurers. In the years that follow directly upon the implementation of the 1948 law there is evidently, an equally sharp deterioration in efficiency. Moreover, this trend seems to have started already in the early 1940s in the case of life insurers, and even further back in the case of joint-stock non-life insurers. In the case of mutual non-life insurers, the variance in the efficiency ratio is quite high, and there is no discernible trend over any longer period of time. The improvement in efficiency during the 1950's is, however, evident also within this group of companies, but the trend is significantly shorter in duration as compared to the other groups.

Figure 7.3. Efficiency of Swedish Insurers, 1920-1980



Source: *Sweden Public Statistics, Private Insurance Companies, 1921-1980*.

In order to test the hypothesis that the insurance law of 1948 caused the efficiency of Swedish insurance companies to increase, we once again performed an interrupted time series analysis, with the natural log of our measure of efficiency as the dependent variable. The same dummy variable and dummy variable counter were included to measure the effect of the 1948 law (Law 1948 level and Law 1948 trend in table 7.3 below). We also included the natural log of our measure of market concentration (HHI) and the variable market size as additional predictor variables, along with one control variable: wages (i.e. the same control as in the previous regression). If the insurance law of 1948 had the anticipated effect, we should expect both HHI and market size to be positively associated with our measure of efficiency, in addition to the Law 1948 level- and/or the Law 1948 trend variables. Rising market concentration was, as mentioned previously, anticipated to improve the efficiency by making it easier for the incumbent companies to attain economies of scale. An increasing market size could be anticipated to improve the efficiency for the same reasons, i.e. enabling companies to spread costs over a larger volume of business. Increasing wages, on the other hand, can be expected to have had a negative impact on efficiency by raising the administrative costs.

The regression results are presented in table 7.3 below. The analysis shows that the insurance law of 1948 did, in fact, have a positive impact on the efficiency of Swedish insurance companies, as indicated by the positive sign of the coefficient for the Law 1948 trend variable. The effect size was reduced after removing serial correlation, but the coefficient in the GLS column still indicates that the regulation contributed to an increase in efficiency of around 1.4 per cent per annum.[340] Contrary to the expectations of Swedish policy makers, however, this effect was clearly not due to increased market concentration enabling companies to exploit economies of scale. Rather, in accordance with the industrial organisation literature, the results in table 3 show that increased market concentration (Ln HHI) had a strong negative impact on the efficiency of the insurance industry, a result that is strengthened when serial correlation is removed (see the results under the GLS column). An increasing market size similarly seems to have had a negative impact on efficiency; a one per cent rise in total turnover is estimated to have caused a 0.44 per cent decline in efficiency. We also ran the regression after including an

[340] Baseline trend (-0.0086) + Law 1948 trend (0.0226) = 0.014.

interaction term between the annual change in HHI and the level of HHI in order to test whether an increase in market concentration could have had a positive impact on efficiency at low levels of concentration, turning negative only at higher levels of concentration. The interaction term was not statistically significant.

Table 7.3. Regression Results: Efficiency of Swedish Insurers, 1920-1980

	OLS	GLS
Ln HHI	-0.25***	-0.26**
	(-3.14)	(-2.37)
Ln real wages	0.25	0.02
	(0.89)	(0.06)
Ln market size	-0.57***	-0.44***
	(-7.94)	(-5.09)
Baseline trend	-0.02***	-0.01***
	(-4.41)	(-2.64)
Law 1948 level	0.10	0.11
	(1.07)	(1.52)
Law 1948 trend	0.06***	0.02***
	(5.38)	(3.50)
Adj R^2	0.39	0.15
D-W	0.65***	1.81
N	244	240

*** Sig. at 1 % level ** Sig. at 5 % level * Sig. at 10 % level.

Given that the increase in market concentration that took place from 1948 onwards was so clearly negative for the efficiency of the insurance industry, many aspects of the 1948 insurance law cannot be expected to have exerted the positive impact on efficiency that was anticipated by Swedish policy makers. As previously mentioned, several of the regulations were in fact aimed directly at achieving a structural rationalisation of the industry, with an anticipated rise in the market concentration. These were, for instance, the so-called principles of 'need' and 'separation', which benefitted incumbent companies at the expense of new entrants, or the 'principle of solvency', which served both to raise the barriers to entry and favoured larger companies at the expense of smaller rivals. If anything, such aspects of the regulation would seem to have been self-defeating, if the aim was to improve efficiency.

The only aspect of the regulation that could plausibly explain the observed improvement in our measure of efficiency from 1948 onwards is the so-called 'principle of equity'. The 'principle of equity' only applied for life insurance companies when the 1948 insurance law was introduced, but was extended to non-life companies in 1950. It was not until 1953, however, that a supervisory authority was put in place. Looking back at figure 7.3, which displays the evolution of our measure of efficiency, it is interesting to note that there is no clear sign of a shift in the trend of the series until 1953/54 in the case of life insurance companies and non-life joint stock companies, and not until 1955 in the case of mutual non-life companies. From 1954/55, when the 'principle of equity' came into effect, however, there was a sharp improvement in our measure of efficiency across all four groups of companies lasting to the mid 1960s. As previously mentioned, the purpose of the 'principle of equity' was to safeguard insurance customers from paying too high premiums. If the implementation of the 'principle of equity' was the main factor that influenced our measure of efficiency, it would primarily have affected the net premium income of the insurance companies, while it is much more doubtful whether it would have exerted any influence on actual productive efficiency. To see whether this was the case, we estimated two final interrupted time series models, one with net premium income as the dependent variable and one with the ratio between insurance claims paid and administration expenses (as a proxy for productive efficiency) as the dependent variable. All other variables were the same as in the previous regression.

The results of this analysis can be seen in table 7.4 below. As expected, the analysis shows that the 1948 insurance law had a negative impact on the net premium income of Swedish insurance companies, as indicated by the Law 1948 level and the trend variables. In the case of productive efficiency, on the other hand, the OLS estimation indicates a negative level shift in productive efficiency of around 15 per cent after 1948, and a positive impact of market concentration, but both these effects disappear when serial correlation is removed.

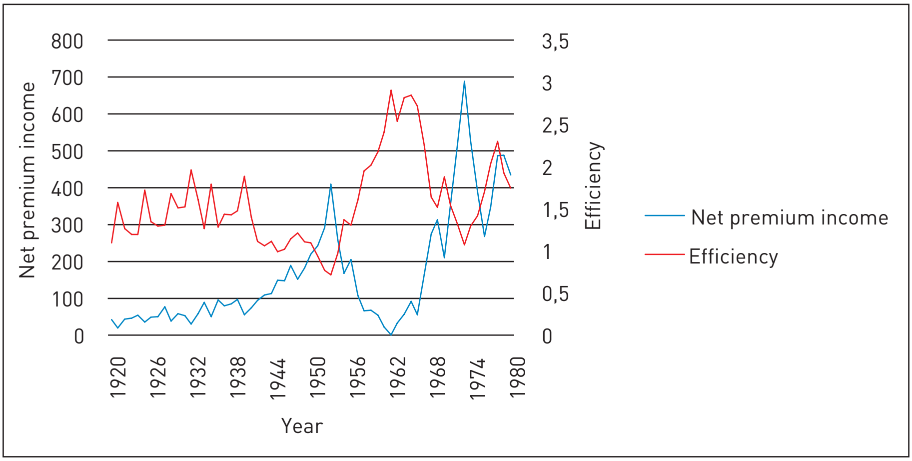
The 1948 insurance law, in other words, had no discernible impact on the productive efficiency of Swedish insurance companies. The main impact of the law does instead seem to have been felt in the form of a reduction in the gross profitability of the industry, due to the restrictions on the level of premiums that were put in place through the 'principle of equity'. While the expressed purpose of the 'principle of equity' was to ensure that the anticipated improvements in cost-efficiency would not be retained by the insurance companies in the form of increased profit margins, but would instead benefit the consumers of insurance, in reality, it would seem that the 'principle of equity' was in itself the only aspect of the regulations that actually made a positive contribution to consumer welfare. Moreover, this contribution seems to have been short-lived. From the mid 1960s, our measure of efficiency (see figure 7.3), which is mainly driven by a renewed increase in net premium incomes within the industry, starts to deteriorate across all four groups of insurance companies. This can be better seen in figure 7.4 below which compares the arithmetic mean of our measure of efficiency for the four groups to the total net premium income of the companies (in 1948 prices).

Table 7.4. Regression Results: Net Premium Income and Productive Efficiency, 1920-1980

	Net premium income		Productive efficiency	
	OLS	GLS	OLS	GLS
Ln HHI	0.12***	0.12***	0.16***	0.04
	(4.83)	(3.44)	(4.82)	(0.91)
Ln real wages	-0.15*	-0.14	0.01	-0.22
	(-1.77)	(-1.22)	(0.08)	(-1.41)
Ln market size	0.18***	0.17***	-0.06**	-0.03
	(7.60)	(5.80)	(-2.04)	(-0.99)
Baseline trend	0.01***	0.00***	0.01***	0.00
	(7.03)	(4.86)	(5.05)	(0.60)
Law 1948 level	-0.17***	-0.11***	-0.15***	-0.02
	(-5.52)	(-4.87)	(-3.80)	(-0.57)
Law 1948 trend	-0.02***	-0.01***	-0.00	0.00
	(-5.45)	(-3.36)	(-0.85)	(1.58)
Adj R^2	0.43	0.26	0.83	0.49
D-W	0.77***	2.00	0.58***	1.84
N	244	240	244	240

*** Sig. at 1 % level ** Sig. at 5 % level * Sig. at 10 % level.

Figure 7.4. Average Efficiency versus Real Net Premium Income, 1920-1980



Source: *Sweden Public Statistics, Private Insurance Companies, 1921-1980*.

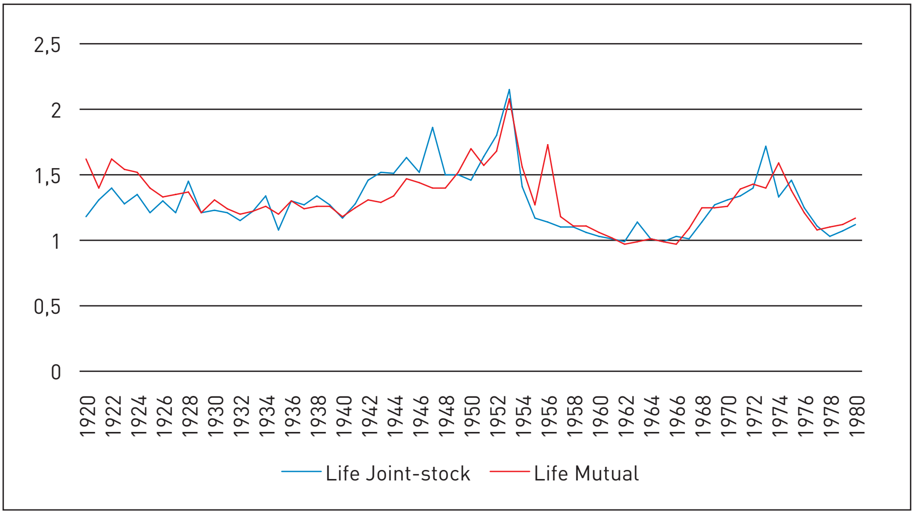
DIFFERENCES BETWEEN JOINT STOCK AND MUTUAL INSURERS

Another question that has been discussed in the Swedish context – as well as in international literature – is whether it is possible to discern any differences as regards profitability among joint-stock insurers and mutual insurers.[341] In theory, the joint-stock corporations should be more profitable, in particular regarding the possibility to access external capital, but also and over time much more likely to outcompete the mutual organisations. However, in Sweden, the mutual organisational form has been regarded as successful and supported by the social democratic government, but the ownership forms during this time – 1920-1960 – joint-stock corporations were gaining market shares at the expense of mutual insurers. Comparing the combined ratio between joint stock and mutual insurers, it is possible see whether the merger waves of joint-stocks in the 1960s and mutual insurers in the 1970s made any impact on their performance, and whether there had been any differences earlier.

341 Larsson and Lönnborg (2018); Larsson and Lönnborg (2019a, 2019b); Wu (2002); Pearson and Yoneyama (2015).

In figure 7.5, it is shown that joint stock insurers were more profitable in the early 1920s than mutual ones; however, mutual insurers were relatively close at the end of that decade and during the 1930s. During World War Two the mutual insurers took the lead, but in the middle of the 1950s the joint stock insurers regained the position as most profitable. The merger wave of the joint stocks in the 1960s had no direct impact on profitability; as a matter of fact costs increased during the early phase of concentration. And as shown in the figures above, the early 1970s was a period when mutual insurers gained on the joint stocks while in the 1980s, the combined ratio was rather even between the two ownership forms. On average for the entire period 1920-1980, the life joint stock companies were slightly more efficient than the mutual companies (1.29 to 1.31).

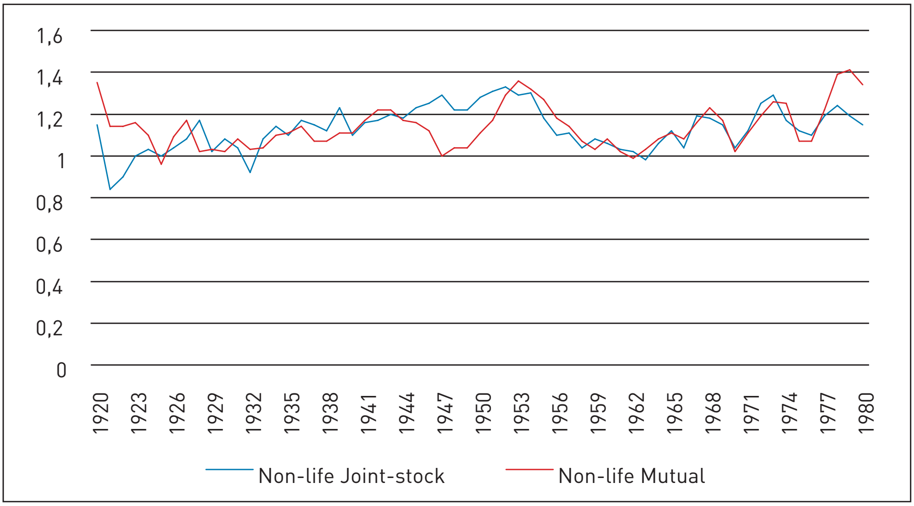
Figure 7.5. Combined Ratio of Joint Stock and Mutual Life Insurers, 1920-1980



Source: *Sweden Public Statistics, Private Insurers 1921-1980.*

The combined ratio for non-life insurers has some resemblances to figure 7.5, i.e. that the joint stock insurers were more profitable during the early 1920s but that the mutual insurers caught up and during World War Two mutual insurers were much more profitable that the joint stocks. The main reason was likely the joint stock presence on the international market that was associated with heavy losses, while the mutual insurers only conducted business in Sweden. One difference as compared to figure 7.5 is that it is not to possible to see any impact of the mergers among joint stock insurers in the 1960s and no impact caused by the mutual insurers mergers in the 1970s. However, in the late 1970s, the mutual insurers demonstrated less profitability. On average for the entire period, the non-life joint-stock companies were more profitable than the mutual enterprises but the difference was surprisingly small (1.30 to 1.37).

Figure 7.6. Combined Ratio of Joint Stock and Mutual Non-Life Insurers, 1920-1980



Source: *Sweden Public Statistics, Private Insurers 1921-1980.*
Note: Measuring the combined ratio for life insurance annually is rarely executed, because that leaves out policyholders' saved capital, which is a substantial part of the total insurance sum.

CONCLUSION

In this chapter, we have analysed the development of the Swedish insurance industry over the period between 1920 and 1980 in terms of the industry's market structure, efficiency, profitability and its contribution to consumer welfare. From the 1930s onwards, the institutional environment for Swedish insurance was drastically altered by rigorous changes in the market regulations. There was an intense political debate in Sweden throughout the 1930s and 1940s concerning the perceived inefficiency of Swedish insurance companies, which fuelled a number of official investigations. In 1948, a comprehensive new Swedish insurance law was implemented, whose principal purpose was to bring about a structural rationalisation of the Swedish insurance market. From a public perspective, the market structure prevailing in the 1940s was considered to be much too fragmented, and characterised by over establishment and destructive competition. It was argued that a more restricted number of large-scale companies would be better able to implement cost-effective routines and develop new low cost insurance products. Increasing the level of market concentration was, therefore, considered to be the most effective means for safeguarding consumer welfare in the insurance market. For this reason, the new insurance law contained a wide set of regulations that raised the barriers to new entry and that favoured large-scale companies at the expense of smaller rivals, by raising the minimum capital requirements, facilitating mergers and acquisitions, and by placing new entry under administrative scrutiny.

In this chapter, we have provided new empirical evidence on the impact of these institutional changes on the functioning of the Swedish insurance industry. Our analyses show that while the 1948 Swedish insurance law did accomplish its objective of altering the market structure of the insurance industry, the rise in market concentration post-1948 did, in fact, have no discernible effect on the productive efficiency of Swedish insurance companies and was even detrimental for consumer welfare. The main effect of the law does instead seem to have come from an administrative restriction on the collection of premiums, which was put into place through the so-called 'principle of equity'. The 'principle of equity' was not a typical price regulation in the traditional sense, but constituted an administrative arrangement under which Swedish insurance companies were obligated to disclose financial information, so as to provide a basis for negotiations with the regulatory authorities concerning the level of premiums for different forms of insurance services. Nevertheless, the regulation seems to have been effective, judging from the fact that the net premium incomes started to decrease sharply from 1953/54, at the time when a supervisory authority was put in place to administer the regulation. It is possible that the increased level of transparency, in and of itself, exerted a downward pressure on prices within the industry, in particular given the fact that the negotiations between insurance companies and the regulatory authorities took place against a backdrop of threats of stricter regulations – or even nationalisation – of the industry.

While the expressed purpose of the 'principle of equity' was to ensure that anticipated improvements in cost-efficiency would not be retained by the insurance companies in the form of increased profit margins, but would instead benefit the consumers of insurance, in reality, it would seem that the 'principle of equity' was in itself the only aspect of the regulations that actually made a positive contribution to consumer welfare. Moreover, this contribution seems to have been relatively short-lived. From the mid-1960s, our measure of efficiency (see figure 7.3 above) starts to deteriorate across all four groups of insurance companies, driven by a renewed increase in the net premium incomes. This may have been due to the fact that Swedish insurance companies started to expand into new markets during the 1960s and 1970s, such as labour market insurance, private pension insurance or international operations, which would have made it more difficult for the regulatory authorities to determine a 'fair' level of premiums. The highly concentrated market structure of the insurance industry would furthermore have added to such difficulties by increasing the informational asymmetries that already existed between the regulatory authorities and the companies.

Finally, the difference between joint stock and mutual insurers regarding the combined ratio was far smaller than expected, even before the introduction of the legislation of 1948, and even though it varied over time, the average differences were relatively small and this is partly evidence of the fact that we have earlier overestimated the competition power of joint stock insurers in both life and non-life insurance. This will be more closely investigated in the future, because the general assumption has been that joint stock insurers lost their market power in association with being taken over by foreign insurers at the end of the 1990s and the beginning of 2000s, but perhaps this happened earlier.