

Selling the sewing machine around the world: Singer's international marketing strategies, 1850-1914

ABSTRACT

The sewing machine was the world's first mass produced and mass marketed complex consumer durable, diffusing more widely around the world than any other consumer good before 1914. This global diffusion was almost the sole responsibility of one firm, Singer. The company's international marketing strategies are analyzed here. Despite its reputation for marketing sophistication, Singer did not engage in price discrimination strategies, extensive advertising campaigns, or pre-emptive investments in retail networks. Singer's remarkable success was more associated with the development of the world's first global brand. The characteristics of consumer demand for sewing machines meant that its strategic investments in market support services associated with the Singer brand yielded a disproportionate success in foreign markets.

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The sewing machine was the world's first mass produced and mass marketed complex consumer good. Its economic and social significance comes, however, not just from being first but also from the sheer ubiquity of sewing machines around the world before 1914. This global spread was quite remarkable. The sewing machine diffused entirely through advanced economies, with their relatively high per capita incomes, such as the United States, Canada, Australia, and New Zealand, as well as industrialized western Europe. More impressive though is how the sewing machine met with unabated popularity in nations on the less developed periphery of this industrial and advanced core. By 1914 demand in Russia, Italy, Spain, and Portugal, for instance, had led to more than one-in-five households purchasing machines there. More surprising still is the extent of diffusion in undeveloped economies, where around 15 percent of households in countries as poor and diverse as Greece, Turkey, South Africa, and the Philippines had purchased machines before the end of the first world war.¹ Remarkably, one company and one alone was almost entirely responsible for the spread of machine stitching to these millions and millions of families around the world, the Singer Manufacturing Company.²

Singer was the seventh largest firm in the world in 1912 by capitalization and is prominent in the general histories of the emergence of the modern corporation having become a byword for both global market dominance and a fully integrated operation.³ One feature that marks Singer's experience as atypical, however, is the firm's extraordinary commitment to international marketing. It began in the 1850s as a manufacturing firm, but

the balance of employment in Singer began to change from the 1880s as its global retail network grew. In contrast to all other emerging giant manufacturers of this era, Singer's resources were focused on sales not production. By 1905 Singer employed twice as many in its marketing compared to production operations.⁴

The traditional interpretation by economists of such a redeployment of scarce capital by a manufacturer into marketing emphasizes attempts by firms to capture market share and, ultimately, secure streams of supernormal profits from an monopolistic market structure. In a world of perfect information, advertising spend is best interpreted as anticompetitive, of course.⁵ Singer, indeed, dominated world markets; but whether this was linked to the company's "aggressive marketing" strategies that drove out competitors is, frankly, unknown.⁶

Weight of empirical evidence suggests that marketing was certainly important to late nineteenth century business, and business historians do give the market-making function more emphasis than economists in their account of the firm. Nonetheless, the conventional business history account of the emergence of modern business relegates the marketing function to subservience.⁷ The basis of Tedlow's account of the emergence of mass marketing in the United States, for example, is that mass production technologies generated the possibilities of low-margin-high-volume strategies. This gave manufacturers a strong incentive to better control distribution. This view of the emergence of mass marketing and advertising remains the dominant paradigm.⁸ The development of modern mass marketing was, according to Tedlow and others, dependent on the creation of scale economies in mass production.⁹

The causality of this relationship is, however, neither universal nor proven. The existence of considerable selection bias in Chandler's work has been highlighted recently by Kim. Neither Chandler nor Tedlow nor indeed any of their followers have sought to compile representative populations of firms. Kim, by contrast, begins with Census of Manufacturing data, hitherto unused by historians, and concludes that it was the existence of economies in marketing, and not in manufacturing, that were the primary determinants of firm size in the United States before 1950.¹⁰

Recent research by British business historians also appears to suggest that marketing investments were more important than hitherto understood. Building on earlier pleas for more systematic research in marketing history, Church's recent reinterpretation of the long Victorian boom credits much of British industrial development to the outcome of marketing investments by provincial branded consumer goods manufacturers attempting to dislodge dominant London merchants.¹¹

For producers the importance of marketing is wholly proportionate to the importance of brands. Without a brand the incentive to develop the marketing function is absent. For most unbranded commodities, for instance, the market-making function is almost wholly subcontracted out to specialized intermediaries. The presence of a brand transforms the set of incentives facing producers, however, and does so fundamentally because of the extraordinary difficulty in pricing the value of a brand with any efficiency whatsoever.

Brands represent a complex bundling of dedicated market support services (such as advertising, demonstration and after-sales service) with the actual product consumed. The relative importance of each of these to building a brand varies according to the kind

of consumer good.¹² Marketing theorists differentiate between search goods, such as foodstuffs, and experience goods, such as appliances. The distinction is built on the recognition that the costs to the consumer to sample a product vary according to the kind of good it is. For search goods, the essential market support service provided by the producer is advertising. For experience goods, producers need to provide additional services, such as demonstration and after sales services, in order to minimize consumer search and sampling costs. Together the market support services and the actual product yield a complex and intangible set of product attributes. When marketing is successful it adds enormous value to the, by comparison, relatively straightforward manufacturing function.¹³ It is, however, the uncertainty associated with the commercialization of market support services with a brand that gives producers a strong incentive to retain the marketing function. Only when the advantages of a producer's specialist knowledge of their product are outweighed by the specialist skills of market-makers would they be better off subcontracting the marketing function.

Most international trade before 1914 was carried out through just such a network of subcontracted relations between producers and market-makers. The emergence of branded consumer goods from the mid-nineteenth century onwards, however, with their ever more complex product attributes, increasingly led to producers investing scarce capital in non-core distribution activities. Britain, for example, saw a host of marketing and retailing inward direct investments by foreign consumer goods producers, or "hybrid-multinationals", retaining manufacturing facilities in their home market, yet pursuing extensive marketing and retailing investments in key foreign markets.¹⁴ Given the absence of necessary expertise among indigenous advertising agencies and retail chains, the

institutional structure in the late nineteenth century even in advanced economies compelled consumer goods manufacturers to trade-off costly investments in marketing against losing sales.¹⁵ For manufacturers in these sectors, the returns from marketing investments exceeded any further economies in manufacturing expansion.¹⁶

Recent business history research highlights therefore the possibility of reversing the conventional causality of late nineteenth century growth in firm size. The emergence of the modern corporation, with its multi-plant manufacturing capability and extensive vertical integration, may have been dependent more on the creation of international product markets than mass production technology. In particular, it may have been the case for producers of branded consumer goods that it was mass marketing which led to increasing manufacturing capacity rather than the other way round.

This paper examines Singer's global sales to 1914. If there was one exemplar of a market-led giant before 1914, it was Singer. Using hitherto unpublished data from the company archives, the paper considers the relationship between Singer's marketing strategies and its much vaunted success in international markets.¹⁷ The paper also tries to distinguish between Singer's strategies in different markets. Conventional industrial economic theory emphasizes the incentives to a dominant firm in erecting barriers to entry via various forms of price discrimination. Singer dominated all the foreign markets considered here, but these had very different characteristics. Singer may very well have pursued aggressive marketing strategies and so built substantial barriers for competitors, but these barriers may well have been very different from market to market. These have been collected into four groups here. The advanced and industrialized economies of first, western Europe, and second, the New World economies of Australia and New Zealand.

Then, third, the much less industrialized economies on Europe's periphery, and, finally, the undeveloped and non-industrialized economies in Africa, the Near East and Asia.

Singer's Global Sales, 1850-1914.

Singer's success was mostly abroad. As one of the sewing machine industry pioneers, it was always an important producer in the United States, but its share of sales in its domestic market was never as high as elsewhere.¹⁸ By the 1880s, shortly after the end of the restrictive Albany patent pool, Singer's share of the American sewing machine market had grown from one quarter in the early 1870s to around 40 percent. After its 1906 acquisition of the industry's longtime number two firm, Wheeler and Wilson, Singer's share reached nearly 60 percent of the American family market. However impressive this may have been, American competitors readily acknowledged that it paled besides the Company's stranglehold in foreign markets. From around a one quarter share of the principal foreign markets in the 1870s, they claimed Singer sold 90 percent of all family machines in Europe, Asia, Africa and Australasia by 1913.¹⁹ By then Singer's sales had multiplied to over two and a half million sewing machines per annum. Table 1 illustrates where this growth was primarily occurring, listing unit sales in the company's principal foreign markets.

<Table 1 here>

Table 1 lists most of Singer's primary foreign markets. The significance of the UK and France as important markets is perhaps unsurprising. Figures 1 and 2 clearly show, however, that Russia emerged as the most important market by far after the turn of the

century. Nonetheless, the Italian and Iberian markets, as well as Australasian and elsewhere, were all important sales areas.

<Figures 1 and 2 here>

While these markets were important to the company in absolute terms, for the purposes of analysis here, these sales figures can be misleading. The effectiveness of Singer's international marketing strategies is best measured by examining the diffusion of Singer sewing machines rather than their annual sales. Comparing diffusion levels is preferable to sales for two important conceptual reasons. First, absolute sales figures take no account of differences in population and so give little indication of Singer's relative impact in these markets. Second, diffusion measures cumulative sales over time and so takes fully into account the durable nature of the sewing machine.²⁰

Rather than recalculate the diffusion paths for all the fifteen nations represented in Table 1, Figure 3 has grouped together these nations into four categories and reports the unweighted mean of Singer's cumulative sales per capita of all the markets in each of the four groups.²¹ These are, first, the United Kingdom, France, Switzerland and the Low Countries of Belgium and the Netherlands. Here, in the core of the advanced European economy, the welfare benefits of industrialization had already been passed on to the bulk of the population by the turn of the century. Improved real disposable incomes in western Europe are most likely to have translated into higher diffusion levels. The second group represents those European nations where industrialization had not yet become so important by 1900, where agriculture retained its dominance, and where per capita real

incomes were substantially below the European core. This group includes Russia, Italy, Spain and Portugal and the Scandinavian countries.

The third group includes nations where industrialization by 1900 was practically non-existent, where subsistence economies still dominated and where per capita incomes were correspondingly low. This includes the Ottoman Empire, India and the Philippines as well as South Africa. Finally, the New World economies of Australia and New Zealand, where abundant factors and high per capita incomes were characteristic, are grouped together. As with any classification system, there are some inconsistencies. To take the two most obvious examples, living standards on the British mainland were higher than in the rest of the European core by some margin, and South Africa combined the economic opportunities of a New World nation with the characteristics of an undeveloped one among the majority of its population. Exceptional cases notwithstanding, Figure 3 demonstrates that the diffusion paths of these groups differed significantly.

<Figure 3 here>

Figure 3 shows the diffusion of Singer sewing machines throughout these different areas of the world. Diffusion in Australia and New Zealand was much higher than anywhere else. By 1884 2 percent, by 1890 4 percent, and by 1914 12 percent of the Australasian population had a sewing machine, the equivalent of around 60 percent of households. Diffusion levels were much lower among the European core. In 1892 2 percent, 1902 4 percent and by 1914 almost 7 percent of the population here had machines, roughly the equivalent of 35 percent of households. In the European periphery, diffusion began later but was much faster than in the core. In 1890 less than 1 percent of

the population here had a machine. In 1900 this had increased to only 2 percent, but by 1914 diffusion in the periphery had reached over 5 percent of the population. There is little information on mean household size for these countries, but where information is available it suggests that mean household size was a little higher on the periphery than in the European core. This therefore translates into a household diffusion which approached 30 percent in the European periphery by 1914.²²

The undeveloped nations experienced much lower diffusion levels throughout. In 1890 only 0.3 percent of the population here had sewing machines, in 1900 only 0.7 percent. But diffusion was gathering pace here too. Sales data for the Philippines and India suggests that by 1918 over 2 percent and 0.2 percent of their respective populations had sewing machines by that time, corresponding to well over 10 percent and 1 percent of households. South African and Ottoman diffusion was considerably higher.²³

The speedy post-1905 diffusion on the European periphery and the beginnings of rapid adoption in the undeveloped economies after 1910 is particularly intriguing. While per capita incomes were rising in some of these nations, they were certainly not increasing as quickly as sewing machine consumption.²⁴ The pertinent question to ask then is whether this rapid adoption of Singer sewing machines in these less developed economies was in response to the company's marketing strategies. The profits from the company's successful sales organizations in western Europe may well have been reinvested in marketing the machine in southern and eastern Europe and beyond and so driving out competitors. Alas, the fragmentary nature of the surviving records in the Singer archives means that it is impossible to rediscover exactly how senior managers chose to develop Singer's global marketing strategies. This paper, however, analyzes the company's internal

management accounts to reconstruct the finances of Singer's international retail organization. This data has only been released by the company to the archive center in recent years and remains largely unprocessed.²⁵ Nevertheless, through reconstructing the series of annual sales revenues, costs and surpluses from each of its principal foreign markets, the outlines of Singer's global marketing strategies can be discerned.

Singer's Global Marketing Strategies.

All the leading American producers began selling sewing machines abroad as exports took up the slack during the Civil War. Postwar dollar appreciation threatened sales in these nascent markets and Singer alone developed a low cost manufacturing base with its Scottish factories.²⁶ This gave Singer a strong advantage relative to its US rivals in these markets as foreign sales began to increase in the 1870s. The marketing strategies developed by Singer in these foreign markets combined developments already tried and tested in its domestic US environment, such as installment purchasing and distributing through company controlled agencies, along with new innovations developed by the foreign sales organizations, the most important being the canvasser/collector direct selling system developed in Britain.²⁷

While each of these innovations may have been particularly important, it is less clear exactly how they influenced either sales or profits. Despite culminating in a remarkably sophisticated global direct sales force, these investments were inordinately expensive. Singer's distribution costs were much higher than competitors and its retail chain was far more expensive than any equivalent chain store operation in other retail trades, groceries or foodstuffs for example.²⁸ Unsurprisingly, with such high overheads

Singer was never a price leader, its strategy remained always to target the upper end of the price spectrum.²⁹ What is surprising, however, given this price premium for what was after all a standardized product, is how Singer was able to increase its market share to such extraordinary levels.

These high prices and market share would be entirely consistent with the early establishment of comprehensive sales platforms and subsequent monopolization of distribution channels. Investment in marketing may not simply have been associated with erecting barriers to entry, however. The following section goes on to examine how Singer developed its brand, in particular through focusing on the importance of the market support services distributed through the company's global retail network. The rest of this section, however, first considers whether Singer pursued price discrimination strategies or pre-emptive investments in either advertising or retail networks.

<Tables 2 and 3 here>

The company's archives do not contain any systematic documentation of its international pricing strategies. Apart from sporadic references in management letters to pricing issues, data can only come from the financial records summarized in Tables 2 and 3. These list the company's annual sales revenues and sales costs in each of the 14 markets included here.

<Figure 4 here>

Figure 4 shows that unit revenues varied quite considerably only between Old and New World markets. Australasian revenue per machine was much higher than elsewhere.

This was not related to any Antipodean demand for more sophisticated and expensive machines. There as elsewhere around 90 percent of sales were straightforward family machines. Rather it reflects a different pricing policy for the Australasian market, where retail prices were increased to American levels. Elsewhere, Singer's retail prices were not only lower but remained more or less the same across all other foreign markets.³⁰ Figure 4 then reflects pricing trends in world markets, with the slight variations between the Old World markets easily accounted for by slightly different model mixes.³¹ Singer's pricing strategy remained unchanged throughout. The company maintained its premium prices at near constant values throughout its Old World markets, for all of the time. This suggests an absence of even short term predatory pricing strategies in any of its markets.

This remains the case even when terms of credit are factored into the company's prices. From the late 1870s Singer operated fairly standard and universal terms of credit repayment.³² Nevertheless, there is some testimonial evidence of a flexible approach to enforcing repayments. According to Carstensen, the Russian sales force, for example, employed far more liberal terms than elsewhere.³³ While the archival records do not list credit terms in different markets, the internal accounts do contain information on cash receipts. These can be used to infer relative credit terms across the different markets.

Table 4 lists the cash receipts as a proportion of the sales at book value in each group of national markets from 1890 to 1914. This ratio ought to vary according to changes in credit terms. If, for example, one national sales subsidiary doubled the term of repayment, and so reduced the effective interest payment and hence the price, the ratio of receipts to sales would drop. Unfortunately the ratio also drops for other reasons. Standard repayment terms exceeded twelve months, so cash repayments were spread over

successive calendar years, whereas machine sales were recorded in the year of delivery. Comparing cash receipts with machine sales for the same calendar years across markets with very different sales patterns is therefore misleading. Figure 5 makes a partial adjustment by reporting the cash receipts in one year calculated as a proportion of the simple mean of sales of that and the previous calendar years.

<Table 4 here>

The results suggest that receipts tended to follow sales very closely, implying that relaxing terms of credit was seemingly unused as a pricing strategy to gain market share. Given the way in which changes in the underlying sales data can distort the ratios, it is perhaps unwise to make too much of the volatility that is shown. The drop in the ratio of receipts to sales in the undeveloped nations after 1910, for instance, is more related to a rapid acceleration in sales there than a fall in receipts (see Figure 2).³⁴

<Figure 5 here>

If Singer did not engage in predatory pricing strategies, then perhaps its marketing was confined to pre-emptive investments in advertising and in retail networks. The purpose of such strategies would have been to create a sales platform, either through extensive advertising or through investing in distribution channels, as markets were developing and so erecting entry barriers to competitors. The rents accruing from the resulting near monopolization of distribution channels would more than compensate for the initial investments.

Whether Singer actually engaged in such pre-emptive investments is once again unknown. What can be demonstrated from the financial records, however, is that any such investments must have been trivially small, for they do not show up as relatively high sales costs in any market at any time. Figure 6 takes the sales costs from Table 3 and divides it through by the annual sales from Table 2. These are charted for the four groups of foreign markets.

<Figure 6>

Figure 6 shows that Singer's retail network was indeed very expensive, with well over half of revenues routinely going to sustain the selling organization. However, the figure also strongly suggests that Singer did not pursue any pre-emptive investments in distribution channels. There is no indication of sales costs having increased dramatically at any given point, and especially not immediately prior to the turn of the century sales growth in the European periphery and in the undeveloped nations, as might be expected if much of the sales growth had arisen from Singer's strategic investments in distribution channels.

The final area considered as a possible route to increasing entry barriers is advertising. Availability of data on Singer's relative advertising spend in different markets over time is much scarcer than for any of the financial indicators used so far. Occasional references in senior management letters indicate that there was an ongoing debate about what the most effective form of advertising was and how much ought to be budgeted, although these discussions tailed off in the 1880s. In the very early days of creating European markets advertising expenditure seemed quite volatile, varying from 5.2 percent

to 1.5 percent of sales revenues in the UK from 1867 to 1873.³⁵ By the late 1870s, advertising spend was evidently closer to 5 percent than 1.5 percent, judging from the disagreement between London agent William Woodruff and New York general manager, George McKenzie. McKenzie complained that “upwards of £10,000 was spent last year on newspaper advertising alone”, most of which was wasted. He insisted that an average advertising spend of 2/- per machine was sufficient in all markets.³⁶ With the retail price of the standard family machine at £5 5/-, this represented an advertising spend of just under 2 percent of sales. This was clearly a challenge. The French office received a stinging rebuke for spending 10/- per machine on newspaper advertising alone in 1879.³⁷ Nonetheless, for the few national sales subsidiaries for which evidence is available, it would appear that by 1884 most had managed to curtail their spending, as Table 5 illustrates.

<Table 5>

Despite the absence of further records, the overall impression from Table 5 is of a policy having been formulated by the New York Head Office, introduced into all sales agencies around the globe, and having been made to stick. Of the nations listed in Table 5, only the fledgling markets of India, South Africa and the Philippines had advertising expenditures significantly above 2 percent of sales. Sales there were very low. More machines were sold in Cardiff than in South Africa, India and the Philippines combined in 1884.³⁸ Advertising may well have been used in these very small markets instead of investing in company controlled sales agencies. Otherwise in Australasia, and the UK, France, Belgium, Switzerland, Italy and Iberia, advertising spend was very close to the prescribed 2 percent of sales.

The evidence is incomplete and does not follow through to the years of really significant market development in the European periphery and beyond after the turn of the century. But the absence of any archival record, the lack of any indicator of advertising spend in the internal accounts after 1884, suggests that McKenzie's advertising policy may well have been applied. In those areas showing significant sales growth in the mid-1880s, the UK, Iberia, Italy and Australasia, there is no evidence of sales growth lagging advertising spend, in fact, if anything, that advertising spend lagged sales growth.

If all agencies were constrained by a 2 percent ceiling on their advertising budgets, it is worth highlighting how this compares with other comparable businesses.

Representative data on advertising spend are rare for any period before the 1950s, but the American Federal Trade Commission discovered that chain stores in the United States in the 1920s spent on average just over 1.5 percent of sales revenues on advertising.³⁹ While it is impossible to know whether this share was also representative of chain stores in the 1880s, and in chains outside the United States, it does suggest that McKenzie's insistence on a 2 percent ceiling was not out of line of a broader retail practice. The available evidence precludes any firm conclusion, but Singer's global advertising spend up to the mid-1880s does suggest that the company was not using advertising spend as a barrier to competitive entry.

The earlier claims of business historians that Singer's route to dominance was through its aggressive marketing are beginning to sound a little hollow. The conclusion of this analysis of Singer's own internal financial records is that Singer did not price aggressively, either in headline prices or credit terms, nor did it invest aggressively in its distribution channels, either through advertising expenditure or through pre-emptively

securing a retail platform in emerging markets. Indeed, the initial conclusion is that Singer had little explicit strategy for foreign markets at all. The company was seemingly content to devise standardized marketing policies and apply them throughout their global organization. While not textbook profit maximising behaviour, this may well have been entirely sensible management given the demand for Singer's machines and the company's constant battles against manufacturing plant capacity constraints.⁴⁰ However, given that Singer was operating with dozens of competitors, the combination of a relatively high-cost distribution system with an apparent absence of strategic marketing does rather beg the question as to how Singer could have attained such remarkable market dominance. To answer this the next section focuses on how Singer invested in its global retail network and developed its global brand.

Singer's Global Retailing Strategy

The emphasis on the competitive edge given to the firm by its retail organization is common to all the company's historians, but, once again, a close reading of the archival material in light of the firm's financial records poses questions for this interpretation of the global diffusion of Singer machines.

The biggest problem to simply linking the retail network to competitive success is that, as already noted, the company controlled retail organization was more expensive than independents. Whether they were, department stores, sewing machine merchants, or dedicated retail chains, independents were always cheaper channels of delivery than Singer's expensive retail network. This is almost certainly the reason why no other large manufacturing company at the time tied its scarce capital up in shops.⁴¹ Singer's deliberate

investment in retail outlets across the globe must then have held considerable strategic advantages for the firm.

There was undoubtedly a strong advantage associated with being better able to coordinate demand with production. Singer's senior management reiterated this point in their letters, especially in their deliberations over factory plant expansion.⁴² But the remarkable and exceptional success of Singer's retail network is probably better understood in light of the characteristics of the late nineteenth century demand for sewing machines.

The sewing machine was the first complex consumer durable sold so widely around the world. It was not complex by the standards of late nineteenth century engineering (indeed, Singer machines were not the most technologically accomplished on the market).⁴³ But they were far more complex than the typical consumer of sewing machines was able to comprehend. This had important implications for the implicit contract between seller and buyer.

Successful sales were dependent on two areas above and beyond product price and quality: demonstration and after sales service. To reduce the uncertainty associated with the first purchase of a family sewing machine, sellers needed to demonstrate to consumers how the machine worked. Furthermore, and given the durable nature of the machine, the probability of a consumer requiring subsequent, post-purchase demonstration was high. Allied to this, post-purchase consumer need was the reasonable probability of a machine requiring repair at some stage. Consumers of this complex durable good were therefore engaging in an implicit contract with suppliers, requiring before- and after-sales market support services over a period of time in addition to the actual product.

Given the durable nature of the implicit contract between buyer and seller, Singer's pioneering of mass consumer credit takes on a more significant light. Contemporaries were amazed, often appalled, at why working class families would pay high interest rates for goods on credit.⁴⁴ As far as sewing machines were concerned the answer was simple. A typical repayment period of up to two years locked the vendor into a relationship with the purchaser as well as the other way round. After-sales service was readily available.⁴⁵

Singer's senior management were evidently aware of the importance of the company's relationships with consumers. It explains why the international retail organization developed as it did. The key innovation in Singer's retail network was not installment purchasing, although that was of course very important, it was the invention of the canvasser/ collector system by the London agent, William Woodruff, in the mid-1870s. The canvasser/ collectors were the key people in the retail organization because they provided the before- and after-sales demonstration services and did so in consumers' homes. Not surprisingly, head office management in New York quickly realized the potential of Woodruff's innovation. It had led to dramatically increased sales not only in the United Kingdom, but also much of western and southern Europe and the British Empire. Edward Clark and George McKenzie, Singer's President and Vice-President in the late 1870s, ensured it was soon the standard practice throughout the United States and the rest of the world.⁴⁶

This emphasis on the canvasser/ collector is warranted because this alone explains how Singer was able to build its brand and so to tap into a latent demand for sewing machines around the world. Within the Singer retail organization, standardization remained haphazard. Despite periodic rationalizations, throughout this period and after,

Singer's foreign retail networks were characterized by considerable autonomy. Standardization was limited to certain reporting procedures. The agents in charge of the national markets were expected to develop the most effective retail structure for their own individual markets.⁴⁷ The ratio of shops to population, for example, varied considerably from high density Britain to low density Russia and Sweden. The common denominator throughout, however, was the role of the canvasser/ collector.⁴⁸

Even with the canvasser/ collector system the details often varied. The original Woodruff template had been to divide the roles and separate the two functions so that the risk of opportunistic behavior from the sales force was minimized. In many countries with much lower population densities, however, this division was simply impractical, and the two functions combined in a single individual traveler. The common denominator was, therefore, the emphasis on contacting consumers in their homes.

Given Singer's retail outlet presence on High Streets throughout the world, this point needs to be elaborated. The fixed retail outlets were of course important, but for the overwhelming majority of sewing machine consumers, women in charge of family homes, it was the ability of canvassers and collectors to demonstrate and provide after-sales service in the homes that proved crucial to Singer's success.⁴⁹ It was, in other words, the creation of a remarkable market support system, grafted onto the direct selling organization, which enabled Singer to gain the trust of consumers around the world and so build what was surely the most valuable global brand of 1914.

Conclusion.

The diffusion of the sewing machine across the world was remarkably high for the period before 1914. The fact that Singer was able to capture almost all of this demand has been explained here not as the result of deliberate marketing strategies attempting to build barriers to competitive entry in emerging markets. In fact, Singer's marketing strategies were crude and undeveloped, even by the standards prevailing in international business by 1914.⁵⁰

Rather Singer's extraordinary success in foreign markets was more due to the peculiarities of the demand conditions surrounding consumer purchase of a complex consumer durable like a sewing machine. In particular, the combination of installment purchase contract and the regular presence of canvassers and collectors meant that sewing machine consumers, women in their homes, were able to overcome the inherent uncertainties associated with such a purchase. By investing in a retail organization, Singer minimized the costs to women sampling this complex product before purchasing. It was this investment in these market support services that constituted the building of their global brand. The company's reward was to be the principal recipients of a mass consumer demand around the world. Singer's growth and emergence as one of the largest companies of the early twentieth century was squarely built on scale economies in marketing, especially in the distribution of a branded complex consumer durable with its attendant market support services. The company captured enormous market share not because of any anticompetitive strategy but through recognizing early the importance of marketing and for its evangelistic zeal for reaching out to its potential customers and making their purchasing decision easy.

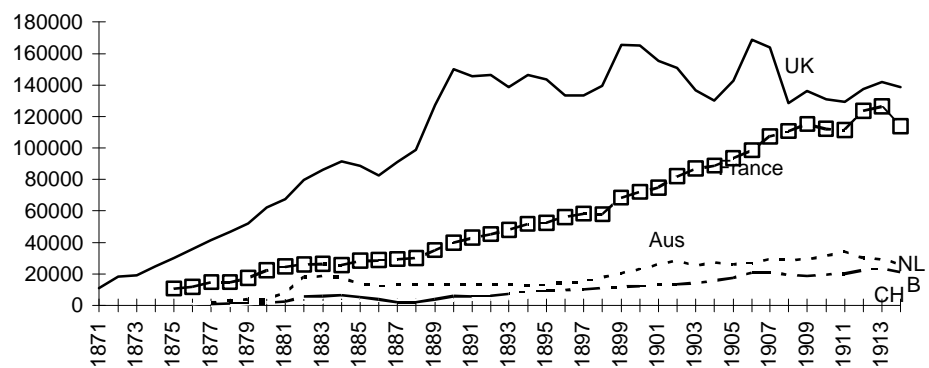
Table 1. Singer Sewing Machines Sales in selected countries, 1875-1914 (machines per annum)

Year	UK	F	B	CH	NL	SP	P	ITA	RUS	SCA	OTT	AUS	SA	IND	PHI
1875	30300	11000				5000	1000								
1876	35800	12000	1000			6000	1500							20	
1877	41300	15000	2000	500	1000	8000	2000	3000	6800	900		2000	300	30	
1878	46800	15000	3000	500	1200	12000	2500	5000	12500	1200		3000	500	70	
1879	52300	17500	4000	1000	1800	16000	3000	7000	18800	1500		4000	700	130	
1880	62252	22500	5064	2102	2000	19205	3961	7500	22300	1800	70	4550	750	250	
1881	67417	24842	5239	2700	2650	24160	5521	8981	27262	2650	200	8131	1354	552	
1882	79815	26144	5409	2424	5600	18747	5500	10001	31600	5700	400	18136	812	515	
1883	85936	26375	5567	2418	6000	20847	4638	12514	35400	7200	1000	18991	760	1088	278
1884	91411	25695	5667	3087	6700	21349	3708	12920	36200	8900	2000	17801	1203	1607	674
1885	88732	28315	6064	3354	5300	17900	3768	12486	41200	7800	2000	13546	1767	1761	494
1886	82432	28900	6200	3457	4100	19285	3894	11900	31200	6500	3000	12410	1950	2012	600
1887	91217	29500	6350	3284	2500	19369	3911	11350	32300	4500	2000	13258	2140	2131	700
1888	98547	30013	6492	3020	2500	21406	4322	10806	52200	5000	1000	13200	2327	2966	782
1889	127266	35096	6765	2965	4200	23927	4831	15726	48100	8500	3400	13200	3170	3578	1220
1890	150008	40091	7807	3328	6000	26590	5065	18010	42000	12700	5400	13200	3627	3763	1195
1891	145901	42891	7470	3704	5800	29165	5562	20001	40700	13000	5800	13200	3473	4145	1074
1892	146561	45263	7185	4116	6300	28213	6257	24592	46100	14922	7000	13200	4362	4824	970
1893	138589	48178	8167	4314	7300	23500	6500	21518	56200	14800	8500	13081	4300	5770	1100
1894	146452	51751	8339	4974	9000	24000	6750	22230	65000	14718	11000	12877	4300	6720	1240
1895	143334	52595	8837	5271	9500	24000	7000	22755	68788	17700	13500	13420	5300	7670	1380
1896	133442	56132	9785	5831	9850	24000	7250	27680	72000	19750	14800	14654	6300	8620	1520
1897	133408	58342	10101	6433	10500	20500	7500	34650	85910	19850	16000	15331	7300	9570	1660
1898	139767	58042	10507	7002	11200	22734	7956	34503	92369	19850	18000	18000	8300	10500	1800
1899	165549	68330	11333	7425	11900	31038	8696	37634	99444	19850	20000	20670	9300	11470	1940
1900	164980	72349	11473	7430	12500	32331	9986	37041	110316	19850	22000	23340	10300	12420	2080
1901	155358	74987	11642	7440	13209	36083	8965	33944	128249	19998	23448	26010	11300	13352	2220
1902	150936	82048	11171	7449	13453	45243	10210	40154	132266	20281	30069	28673	12274	13351	2357
1903	136622	86973	11241	7666	14612	48694	11135	43435	182668	22920	37729	25432	14672	15842	1937
1904	130290	88936	11842	7602	16095	45092	10864	49970	202592	26319	46042	27558	11196	17781	1350
1905	142659	93528	12446	8373	17714	39916	10460	51894	310881	29799	46187	26066	12220	18075	1612

1906	168737	98772	12938	8907	21009	43449	10647	56325	376336	36305	52706	26965	10844	17331	1435
1907	163976	107514	13675	9264	21124	44313	10705	67219	413905	39935	53900	29593	8662	20478	2067
1908	128396	110899	13561	8342	19612	43702	10568	71724	446151	41366	51254	29194	6796	20159	2241
1909	136349	115129	14862	8477	19048	43918	11367	70444	481796	43327	54463	29369	7781	20873	2642
1910	130726	112303	15655	8522	19559	52020	11613	78182	505066	45675	66757	31546	10523	24855	4120
1911	129173	111566	16535	8394	20347	61229	13732	94308	504489	44738	84623	34088	11888	26582	14366
1912	137654	123833	18330	8790	22693	75413	16491	110792	570371	45921	88509	30527	12944	36481	17714
1913	142026	126320	19288	7832	23814	72580	16654	110665	675174	47815	78415	29458	14486	44819	27266
1914	138703	114000	17350	7050	21500	67201	15420	97817	678986	43000	78000	26582	13250	41437	16520

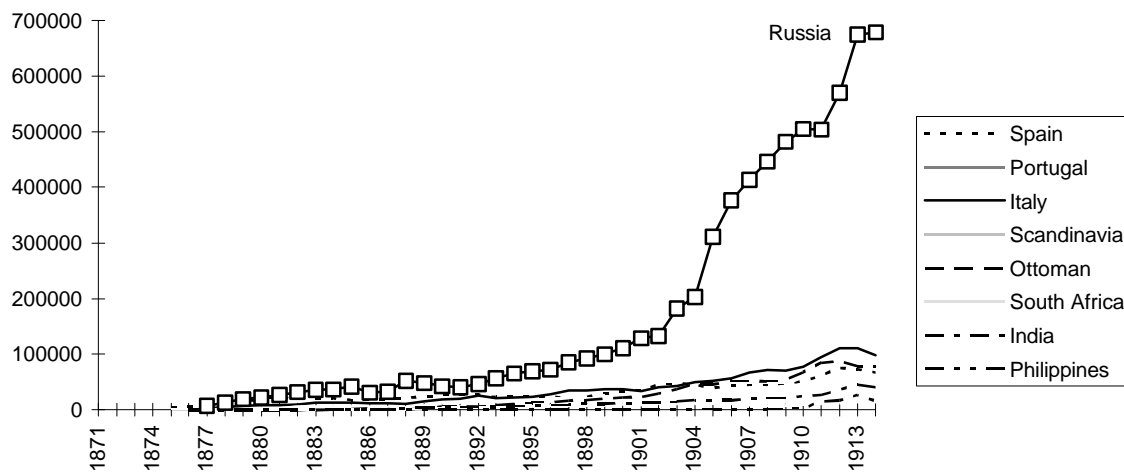
Notes and sources: All taken from Godley 2000, tables 2-4, and sources there.

Figure 1. Singer's Sales in Advanced Economies, 1870-1914 (machines per annum)



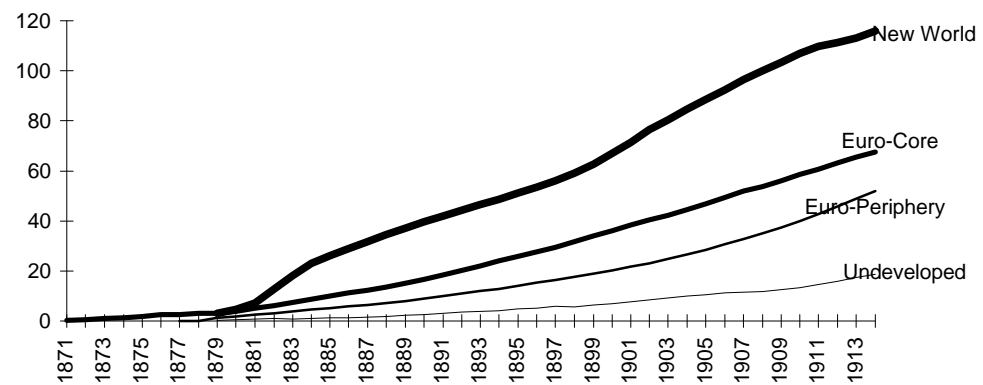
Source: Table 1.

Figure 2. Singer's Sales in Less Advanced Economies, 1870-1914
(machines per annum)



Source: Table 1.

Figure 3. Global Sewing Machine Diffusion, 1870-1914
(machines per 000 population).



Source: Table 1 and see text.

Table 2. Singer's Global Sales Revenues (US\$), 1880-1914

Year	UK	F	B	CH	NL	SP&P	ITA	RUS	SCA	OTT	AUS	SA	IND	PHI
1880		804670	163806	52473		820018	249653				140877	20538	7494	
1881	2027485	886969	177798	82975		928114	299152				209451	36946	15503	
1882	2447336	937037	180588	74966		806959	320303				633370	26079	17686	
1883	2667936	957891	187061	75656		867962	428579				770986	25510	32756	9667
1884	2848558	934797	197768	90216		889613	448704				688584	41495	44435	22769
1885	2847625													
1886	2222148										565155			
1887	2609543										612141			
1888	3152667	1072033	223293	95538		854996	350766					75767	75568	25209
1889	4093991	1272120	233163	95164		928440	492303					99023	86309	34331
1890	4988638	1465541	267990	109025		1002478	615138					114137	91509	34963
1891	5015191	1591209	260786	126109		1103757	684804					117413	104155	31342
1892	5131742	1695045	256244	141336		1128158	811507					153722	121121	28470
1893	4938639	1815805	295503	145226		1010812	708817				708258			
1894	5464434	1912231	299329	162129		952945	679454				706051			
1895	5680653	1971697	323997	174021		951826	700268				738234			
1896	5398853	2147927	371260	194958		967929	885257				809593			
1897	5524362	2246566	392102	214735		956779	1119486	2930557			874013			
1898	5851655	2260459	406388	236655		1059021	1118589	3226760						
1899	6951189	2661735	444797	245965		1389082	1220380	3742917						
1900	7025854	2851933				1518416	1210619	4203127						
1901	6626600	2956024				1662613	1158368	4966360						
1902	6453798	3250823	447024	275470	354591	2042342	1337150	5268994	586279	860125	1813629	496741	372161	51699
1903	5765188	3450611	451551	287676	400407	2227351	1430060	7113892	693183	1112419	1626263	606596	444758	39197
1904	5250412	3525282	482219	289450	440064	2111568	1681639	7606920	815120	1433147	1764464	464283	508042	32609
1905	5318562	3718423	522623	322138	493965	1941569	1766085	11646870	926838	1527392	1673047	495319	526499	44099
1906	6502798	3928056	548596	340754	582069	2124004	1911924	14181573	1138314	1698926	1747035	437383	515209	39497
1907	6425622	4267718	588028	359094	590565	2354671	2541080	15824939	1271111	1838563	1897451	350392	601898	54814
1908	5037313	4382106	587250	328724	556127	2344488	2749773	17652794	1313374	1748871	1901366	285971	593587	67825
1909	5659242	4607084	619072	333439	549708	2473455	2713392	20070494	1385123	1835384	1935151	336203	625390	76916
1910	5508180	4563583	659689	335365	565762	2831732	3039136	21640493	1476991	2269339	2080936	456697	741400	106906
1911	5281525	4682818	692676	331103	594638	3338267	3637270	22385294	1484132	2925521	2239449	507635	860109	595721
1912	5673117	4948962	758961	353221	667058	4028666	4203578	25640061	1545868	3023899	2040932	550286	1178816	784803
1913	5980637	5088064	803256	323735	666569	3916819	4129276	31360709	1615128	2706084	2034897	611494	1469057	1259581
1914							3778421				1856322		1342590	738833

Notes and Sources (all original sources from the Singer archives throughout. Blank cells equal no data.):

UK sales see A. Godley, "Pioneering Foreign Direct Investment in British Manufacturing," Business History Review 73 (1999), Table 2, 419-421 and sources cited there.

France (including Algiers, but not Swiss-French customs zone):

1880: estimate derived from the aggregate value of machines etc. sold and net book accounts receivable at Paris Central Office during 1880, "Schedule B: London. Dec. 31, 1880," (P92-8970 Micro 2002, reel 17, 177-9). **1881**: annualized estimate from sales to end of August, "Comparative Statement of Business at Foreign Offices 1881 & 1882," (Box 103/4). **1882**: "New York Department, London. Abstract of Business for... 1882," (Box 94 folder6). **1883-4**: "Summary of Business at [Foreign] Offices, 1883 & 1884," (Box 95/4). **1888-9**: Annualized estimate from sales to end of August, "Comparative Statement of Business... to 31.8.1888 and 1889," (Box 107/3). **1890-1**: "Comparative Statement of Business at Foreign Offices... to 31st December 1890 and 1891," (Box 98/1). **1890-99**: "Paris - End of Year Results, 1890-99," (Microreel 703 (1), n.b. this source tallies with above). **1900-04**: "Paris - End of Year Results, 1900-04," (P92-8957 Micro 2002, reel 4, section 5, 126). **1902-13**: "World Reports, annual," (Micro AP93-0444, unprocessed accession).

Belgium:

1880-4: sources as for France. **1888-9**: annualized estimate, same source as for France. **1890-91**: Same as for France. **1890-99**: "Brussels - End of Year Results, 1890-99," (Microreel 703 (1), which tallies with above). **1900**: annualized estimate from first 11 months sales, "Etat comparatif... 1899-1900," (Box 80/3).

1901: Annualized estimate from first 5 months of year, "Etat comparatif... 1900-1901," (Box 80/3). **1902-13**: as for France.

1880-1: annualized estimates from first 46 weeks of sales, "Summary of Business in Switzerland, 1880 and 1881," (Box 83/4). **1882-89**: as for France. **1890-9**: "Geneva - End of Year Results, 1890-99," (Microreel 703 (1)). **1902-13**: as for France.

Spain and Portugal:

1880: annualized estimates for Spain and Portugal from "Results at Madrid C.O. to June 30th [1880 -] 1881," (Box 106/4). From 1881-1897 Spanish and Portuguese results reported together under Madrid Central Office. **1882-9**: as for France. **1890-7**: "Madrid - End of Year Results," (Micro 703 (1)). **1898-9**: "Spain - End of Year Results, 1898-1899," and "Portugal - End of Year Results, 1898-1899," (Micro 703 (1)). **1900-1**: "Madrid - Spain only - End of year Results, 1900-1904," and "Lisbon - Portugal only - End of Year Results, 1900-1904," (P92-8957 Micro 2002, reel 4, section 5, 90 and 102). **1902-14**: As for France, note Spanish figure for 1914 reported.

Italy:

1880-9: estimates and actual results as for France. **1890-9**: "Italy - End of Year Results, 1890-1899," (Micro 703 (1)). **1900-1**: as for Spain and Portugal but p. 114. **1902-14**: as for France, note 1914 figure for Italy reported.

Australasia:

1880: estimate as for France. **1881**: Australia (Melbourne office only, Sydney opened in 1882) from Thomas to McKenzie, 15 Jan. 1883 (Box 76/9). New Zealand annualized estimate as for France. **1882-4**: as for France. **1886-7**: Australia "Comparative Statement at New South Wales and Melbourne, 1886 and 1887," (Box 78/1, note, Australian reporting year actually ran from twelve months to Oct. 31st of reporting year). New Zealand estimated from unweighted mean share of sales relative to Australia for 1881-5. **1893-7**: "Comparative Summary of Business, Australasian Branches, Years 1893-1897," (Box 79/5). **1902-1914**: as for France.

South Africa:

1880-91: estimates and actual results as for France. **1892**: annualized estimate from first half, "Comparative Statement of Business at [Foreign] Offices, to end of June 1891 and 1892," (Box 98/3). **1902-13**: as for France.

India:

1880-91: estimates and actual figures as for France. **1892:** as for South Africa. **1902-14:** as for France, 1914 figure reported.

Philippines:

Office opened in 1882. **1882-92:** estimates and actual values as for France. **1902-14:** as for France.

Russia (including Finland):

1897-9: “St. Petersburg [Russia] - End of Year Sales, 1897-99,” (Micro 703 (1), note 1897 is estimate from second half sales). **1900-1:** “St. Petersburg - End of Year Sales, 1900-01,” as for France and confirmed by F. Carstensen, “American Multinational Corporations in Imperial Russia: Chapters on foreign enterprise and Russian economic development,” (unpublished Ph.D. dissertation, Yale University, 1976), Table 4, p.146. **1902-13:** as for France. **1914:** Carstensen, “American Multinational”, Table 4, p.146.

Scandinavia:

1901: estimate from “Stockholm and Christiania - End of Year Results [from July 1], 1901,” (P92-8957 Micro 2002, reel 4, section 5, pp.128, 130). **1902-13:** as for France.

Netherlands:

1901: estimate based on “G. Neidlinger, Hamburg - End of Year Results, 1901,” (P92-8957, Micro 2002, reel 4, section 5, p.50) and deducting Scandinavian and Ottoman estimates (above and below). **1902-13:** as for France.

Ottoman Empire (included Balkans, ie. Romania, Servia, Bulgaria and Greece):

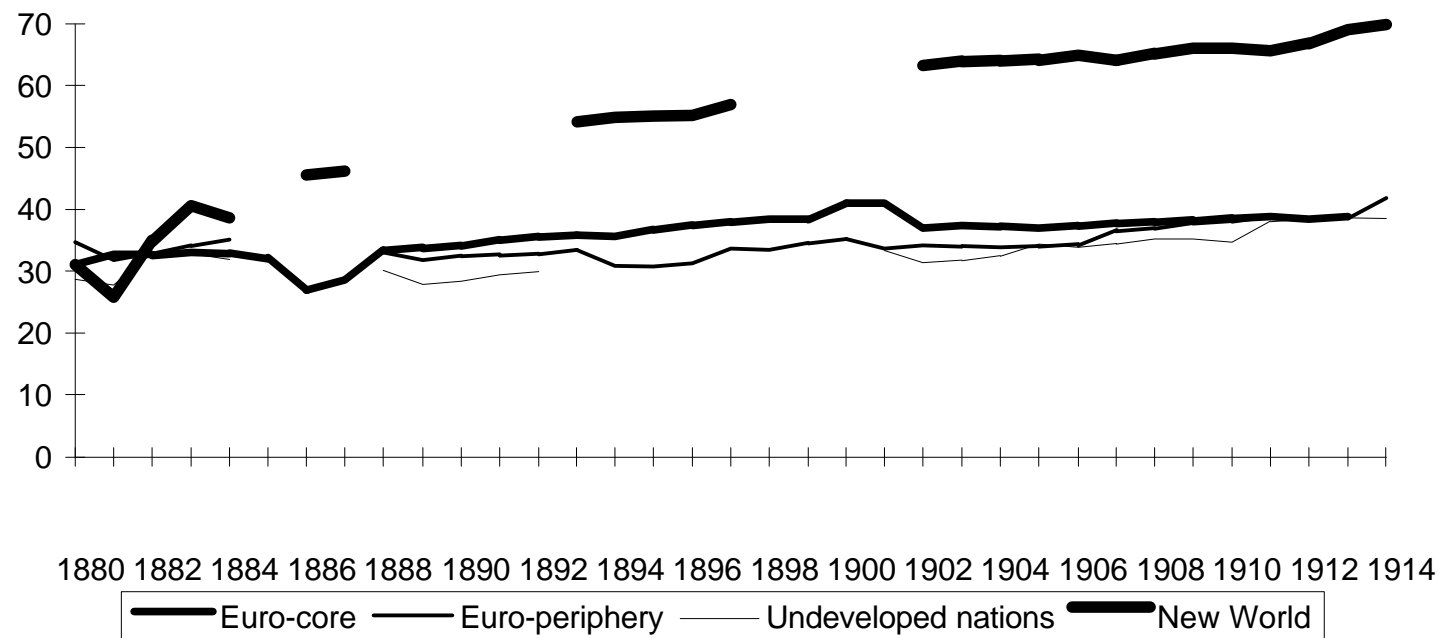
1901: estimate from “Romania and Servia, Bulgaria and Greece, Turkey and Egypt - End of Year Results [from July 1], 1901,” (P92-8957, Micro 2002, reel 4, section 5, pp.51-3). **1902-13:** as for France.

Table 3. Singer's Global Sales Costs (US\$), 1880-1914

Year	UK	F	B	CH	NL	SP&P	ITA	RUS	SCA	OTT	AUS	SA	IND	PHI
1881	862033	458526	94192	47079		385549	150130				95868	16067	5924	
1882	986036	496012	100301	45694		434270	175577				238179	16471	7203	
1883	1171177	575609	122239	53387		415773	222321				433138	20052	15168	6371
1884	1281154	596458	129796	58262		465311	256866				427928	27896	22735	11708
1885	1259513													
1886	1120624													
1887	1220234													
1888	1616135	621021	129159	58553		430562	248132					29889	32805	13822
1889	1875391	745310	130972	58757		460918	300450					38297	35590	15732
1890	2431584	923373	149147	65048		497634	403607					48177	36450	16898
1891	2524453	935866	153175	78195		586762	407355					52483	42685	16232
1892	2664586	991533	153644	86036		745072	444172					68555	48415	17875
1893	2686885	1080393	162560	87843		898294	434128							
1894	2903850	1140081	160310	90252		522371	428798							
1895	3128409	1185373	167524	99917		505265	433934							
1896	3006010	1317262	187280	112983		552244	506800							
1897	2975509	1358587	197655	123125		567015	641380							
1898	2972957	1329457	205321	133612		550943	675741	1392402						
1899	3413753	1449474	206766	140967		670625	710680	1735366						
1900	3609103	1547216				712543	720370	2075239						
1901	3775792	1623262				779113	720770	2395708						
1902	3283060	1759611	205536	145207	187590	901615	740032	2617452	327720	468064	1059131	218959	98957	22215
1903	3071401	1883210	205510	151895	208382	1006335	724411	3202169	372831	578504	1003630	284588	118973	19972
1904	2746642	1909846	213712	152673	227998	1011748	847536	3538130	441526	730140	1034187	269065	128097	17183
1905	2684967	1995664	228723	169360	250283	937677	861853	4859987	480131	797932	940204	295073	140352	22803
1906	3268671	2083731	237824	169019	290517	1034524	958086	6836211	581169	851765	941975	287536	150760	22102
1907	3303547	2253632	251395	181142	311236	1222996	1293067	7743880	647936	999837	992458	239499	159296	24452
1908	3075405	2414466	263632	177289	310121	1252888	1386960	8254681	679933	1049480	1045015	211509	162678	27394
1909	2971845	2523372	285862	178107	313143	1298807	1408197	8761863	736864	1075095	1031470	216720	168665	28677
1910	2942767	2475748	297903	181232	296331	1385124	1572343	9775329	772746	1187670	1069984	264488	200089	43190
1911	2974621	2524560	315711	179604	307325	1596724	1802953	10135529	809492	1408853	1117204	293389	275290	208684
1912	3041832	2801953	338190	195080	329120	1917502	2058417	10957245	867810	1652725	1128552	305166	382068	358205
1913	3235049	2861398	358931	184055	332158	1949095	2080953	13911848	866550	1518995	1144078	325119	500969	520088
1914							2104000				1092138		557410	355347

Notes and Sources: as Table 2, with the exception of no data for 1880. Blank cells equal no data.

**Figure 4. Singer's Global Retail Revenues (US\$ per machine),
1880-1914**



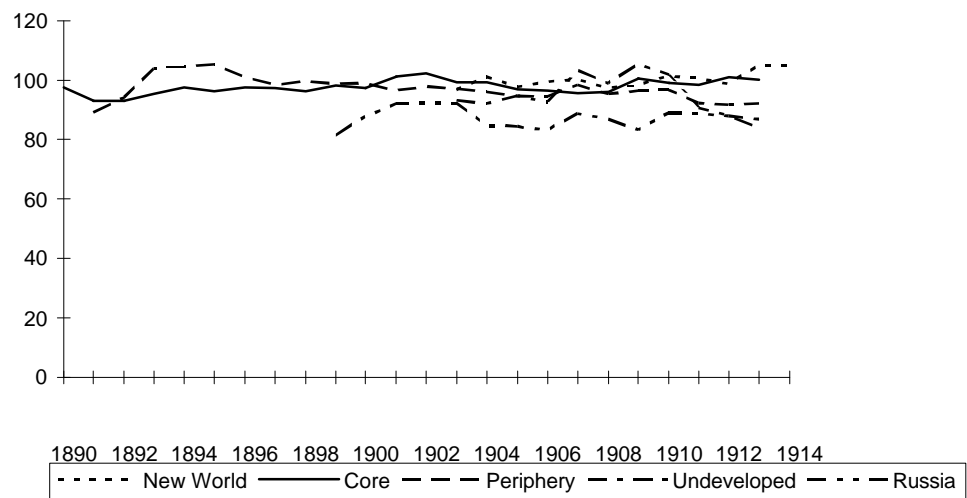
Source: Tables 1 and 2.

Table 4. Receipts as Proportion of Book Sales, 1890-1914

Year	New World	Euro-core	Euro-periphery	Undeveloped	Russia
1890		98			
1891		93	89		
1892		93	94		
1893		96	104		
1894		98	104		
1895		96	105		
1896		98	101		
1897		97	98		
1898		96	100		
1899		98	99		82
1900		97	99		88
1901		101	97		92
1902		102	98		92
1903	97	99	97	93	92
1904	101	99	96	92	85
1905	98	97	95	95	85
1906	99	97	95	93	83
1907	100	96	98	103	89
1908	97	96	95	99	87
1909	98	101	96	106	83
1910	102	99	97	102	89
1911	101	99	92	91	89
1912	99	101	92	88	88
1913	105	100	92	84	87
1914	105				
mean	100	98	97	95	87

Sources: Book value sales Table 2. Cash receipts from same sources as Table 2.

Figure 5. Receipts as a Proportion of Book Sales (%)



Source: Table 4.

Figure 6. Sales Costs as Proportion of Revenues, 1880-1914 (%)

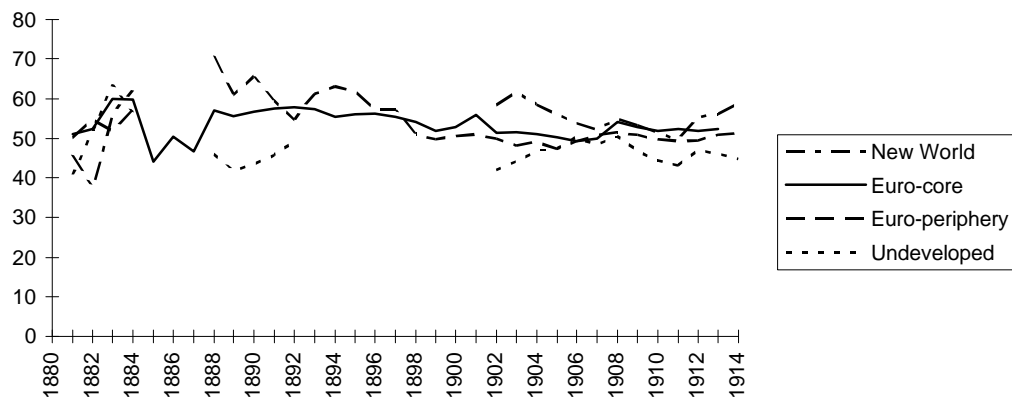


Table 5. Advertising Spend in Selected Offices, 1882-4 (percent of sales revenue)

Year	UK	France	Belgium	Switzerland	Spain and Portugal	Italy	Australasia	South Africa	India	Philippine s
1882	2.5	1.5	2.5	2.2	1.5	2.2	2.8	6.5	7.3	
1883	1.4	1.7	4.1	3.3	1.8	1.4	2.3	8.7	9.3	7.6
1884	1.3	1.8	2.5	2.4	1.9	1.5	1.6	6.2	8.3	4.5

Sources: 1882: New York Department, London, 'Abstract of Business... 1882', Box 94/6.

1883 and 1884: 'Summary of Business... 1883 and 1884', 95/4.

1 Per capita diffusion figures taken from A. Godley, 'The Global Diffusion of the Sewing Machine, 1850-1914', Research in Economic History, 20, (2000 forthcoming).

2 Singer's history is covered by A. Jack, 'The Channels of Distribution for the Innovation: the sewing machine industry in America', Explorations in Entrepreneurial History 9 (1957), R. Davies, Peacefully Working to Conquer the World (New York, 1976); F. Carstensen, American Enterprise in Foreign Markets (Chapel Hill, 1984); D. Hounshell, From the American System to Mass Production, 1800-1932 (Baltimore, Maryland 1984), chapters 2 & 3; and M. Wilkins, The Emergence of Multinational Enterprise (Cambridge, Mass., 1970), chapter 3.

3 See C. Schmitz, "The World's Largest Industrial Companies of 1912" Business History 37 (1995), 89; and L. Hannah, "La evolucion de las grandes empresas en el siglo XX: un analisis comparativo", Revista de Historia Industrial 10 (1996), 119. A.D. Chandler, The Visible Hand (Cambridge Mass., 1977).

4 Davies, Peacefully Working, p. 140. on employment in 1905. International Harvester was perhaps the next most marketing led of the largest firms in the world by 1912. See Carstensen, American Enterprise.

5 See J. Galbraith, The Affluent Society (Harmondsworth, 1962); N. Kaldor, "Advertising and Economic Structure," Review of Economic Studies, 18 (1950): 1-27. For a review see T. Corley, "Marketing and Business History," in The Rise and Fall of Mass Marketing, ed. R.S. Tedlow and G. Jones (London, 1993).

6 Citation from Chandler, Visible Hand, p.304.

7 For a recent overview see R. John, 'Elaborations, Revisions, Dissents: Alfred D. Chandler, Jr.'s, The Visible Hand after Twenty Years', Business History Review 71 (1997).

8 R. Tedlow, New and Improved (New York, 1990).

9 For this 'stage' approach to the development of marketing see, for example, S. Strasser, Satisfaction Guaranteed (Washington DC., 1995); Strasser et al eds., Getting and Spending (Cambridge, 1999); as well as Tedlow, New and Improved.

10 S. Kim, "The Growth of Modern Business Enterprise in the Twentieth Century," Research in Economic History 19 (1999): 75-110; and Kim, "The Rise of Multi-unit Firms in U.S. Manufacturing," Explorations in Economic History 36 (1999): 360-89.

11 R. Church, 'New Perspectives on the history of products, firms, marketing, and consumers in Britain and the United States since the mid-nineteenth century', Economic History Review 52 (1999): 405-35; and idem, "Ossified or Dynamic? Structure, Markets and the Competitive Process in the British Business System of the Nineteenth Century," Business History 42 (2000):1-20; building on T. Corley, "Consumer Marketing in Britain, 1914-1960," Business History 29 (1987): 65-83; S. Nicholas, "The Overseas Marketing Performance of British Industry, 1870-1914," Economic History Review, 37 (1984); and R. Davenport-Hines, "Introduction," in Markets and Bagmen: Studies in the History of Marketing and British Industrial Performance, 1830-1939 (London, 1986) ed., R. Davenport-Hines.

¹² K. Lancaster, "A New Approach to Consumer Theory," Journal of Political Economy 74 (1966): 132-57.

13 Church, "New Perspectives," on search and experience goods. The most well known marketing theorists include Philip Kotler (see his Marketing Management [London, various editions, eg. 1984]) and Theodore Levitt (see "The Globalization of Markets," Harvard Business Review [1983]).

14 A. Godley, "Pioneering Foreign Direct Investment in British Manufacturing," Business History Review 73 (1999): 394-429; S. Fletcher and A. Godley, "Foreign Direct Investment in British Retailing, 1850-1962," Business History 42 (2000): 42-61; and Godley and Fletcher, "The Impact of Foreign Multinationals in British Retailing, 1850-1961," Economic History Review (2001) forthcoming.

¹⁵A. Godley and S. Fletcher, "International Retailing in Britain, 1850-1994," Service Industries Journal, 21 (2001) forthcoming; Fletcher and Godley, "Foreign Entry into British Retailing, 1850-1994," International Marketing Review 28 (2000) forthcoming; R. Church, "Advertising Consumer Goods in Nineteenth-Century Britain: re-interpretations," Economic History Review 53 (2000) forthcoming.

¹⁶ Church, “Ossified or Dynamic?”. Singer exploited significant technical economies of scale in production in the 1860s and 1870s, but unit costs typically rose slightly thereafter despite output increasing by a factor of five from 1880-1913. See Godley, “Pioneering FDI,” esp. pp.424-6.

¹⁷ The Singer archives are housed at the State Historical Society of Wisconsin, Madison, Wisconsin, USA.

¹⁸ Davies, Peacefully Working, on early competitors, 5-15 and 54-5; also Hounshell, American System, chapter 2; F.G. Bourne, “American Sewing Machines”, in C.M. Depew (ed.) One Hundred Years of American Commerce (New York, 1968, orig. 1895), 530; and N. Oddy, “A Beautiful Ornament in the Parlour or Boudoir: The domestication of the sewing machine,” in The Culture of Sewing: Gender, consumption and home dressmaking, edited by B. Burman, (Oxford, Berg, 1999).

¹⁹ Davies, Peacefully Working, p.161.

²⁰ In fact diffusion is overstated in the conventional measurement because of the typical non-allowance for depreciation. See S. Bowden and A. Offer, “Household appliances and the use of time: the United States and Britain since the 1920s,” Economic History Review (1994) 47: 725-748.

²¹ Population data come from B. Mitchell, British Historical Statistics, (Cambridge: Cambridge University Press, 1988) for the UK; idem International Historical Statistics: Europe. 4th Edition, Basingstoke: Macmillan, 1998) for SP, P, ITA, F, CH, B, NL, Russia (R, including Finland), Scandinavia (SCA, aggregating Denmark, Norway and Sweden), and the Balkans (Greece, Bulgaria, Romania and Serbia). Mitchell, International Historical Statistics: Africa, Asia and Oceania, 1750-1993, (Basingstoke: Macmillan, 1998), gives South Africa (with an adjustment made here to account for the unenumerated Transvaal and Orange Free State population for pre-1904), India, Australia (with an adjustment made here to account for the unenumerated Australian aboriginal population, and including New Zealand), the Philippines (Christian population only, ie. c.85-90% of total), and Ottoman Turkey. Straightline interpolations throughout for missing years.

²² Household size data is fragmentary. See Mitchell, International Historical Statistics (both volumes); and more generally P. Bairoch, Cities and Economic Development (London, 1988).

23 See “World Reports, annual,” 1902 through to 1940 (Singer Archives (hereafter SA), Micro AP93-0444, unprocessed accession) for post-1914 data unreported in tables here.

24 Compare with J. Williamson, “The Evolution of Global Labor Markets since 1830: Background evidence and hypotheses,” Explorations in Economic History 32 (1995): 141-196 and “Erratum,” p.553, for example. Also see Godley, “Global”.

25 The Singer archives at Madison, Wisconsin, received several different accessions, and have used several different cataloguing systems. Much of the financial data used here is from the most recent and currently unprocessed accession.

26 Godley, “Pioneering FDI”.

27 Jack, “Channels of Distribution”; and Davies, Peacefully Working pp.19ff, on US developments.

Installment purchasing introduced first in the UK from 1873, and the replacement of independents by company controlled agents from 1875-6. See Singer’s British agent, William Woodruff writing to Singer President, Edward Clark, 19 May 1877 (SA, Box 93, Folder 9); Red ‘S’ Review (Singer’s in-house journal) 1 (1919-20) p.20 (Note, the only extant copies of these I have been able to locate are in the archives of Clydebank Library, Scotland); Carstensen, American Enterprise, chapter 1; and Davies, Peacefully Working pp.39-40.

28 Godley and Fletcher, “Impact of Foreign Multinationals”.

29 “Retail Prices in England and Foreign Offices, 31/12/1884,” (SA, Box 95/4); also Swiss agent, L. Charriere, to London (New York?), 8 Jan. 1892 (SA, Box 83/5). US prices up to 1876 had been protected under the terms of the patent pool, see Davies, Peacefully Working, p.58. Also see A. Godley, Enterprise and Culture: Jewish Immigrant Entrepreneurship in London and New York, 1880-1914 (Basingstoke and New York, 2000 forthcoming), chapter 5.

30 “Retail Prices in England and Foreign Offices”.

31 On model upgrades in Russia, see Carstensen, American Enterprise, chapters 4 and 5. Variations in mean unit revenues of up to 10% are easily accounted for by the proportion of standard family machines

sold with or without covers, stands, or enameled lettering, with the cash discount, and so on. See Red 'S' Review, 1 (1919-20), pp.20-1.

32 Red S Review *ibid.* Godley, Enterprise and Culture, p.245, n.45, on repayment terms in London.

33 Carstensen, American Enterprise, pp.58-9 on Russia. But agents were very flexible elsewhere. See Singer Vice President, George McKenzie, "Memo to all agents, 21 Sep. 1885," (SA Box 95/5); and "Audit of Manchester Office by G.B. Dobson, May 1892," (SA, Box 98/3), for example.

34 Russia is the one market where cash receipts as a share of sales were relatively low. Receipts were on average 87% of that and the previous year's sales. This compares to 100% for the New World markets, 98% for the European-core, 97% for the periphery, and 95% for the undeveloped markets. However, this relatively low cash to sales ratio is primarily a consequence of the extraordinarily rapid growth in Russian sales. Russian sales were growing so much more quickly than elsewhere that the effect on the calculation is to produce this lower ratio. Credit terms may well have been a little more liberal there than elsewhere, as Carstensen suggests, but only marginally so. And while Singer's credit may have had an undue impact in the Russian economy (see Carstensen, "Numbers and Reality: A Critique of Foreign Investment Estimates in Tsarist Russia," in *????*, pp.281-2, for an estimate of Singer's credit out of total credit), Russian price (credit) elasticity of demand is surely unlikely to have been significantly higher than in other less developed nations.

35 See McKenzie to Clark, 29 March 1879, and esp. McKenzie to Woodruff, 16 Apr. 1879 (both in SA Box 93/9).

36 McKenzie to Clark 29 March 1879; and Woodruff's defense, Woodruff to Clark, 14 Apr. 1879 (both in SA, Box 93/9).

37 "Retail Prices in England and Foreign Offices"; McKenzie to Clark, 29 Mar. 1879 (SA, Box 93/9).

38 A. Godley, "Singer in Britain: the diffusion of sewing machine technology and its impact on the clothing industry in the United Kingdom, 1860-1905," *Textile History*, 27 (1996): 59-76 on UK regional sales.

39 Kim, "The Growth of Modern Business Enterprise," Table 6, p.96.

40 Chandler, Visible Hand, pp.405-6; Davies, Peacefully Working.

41 From International Harvester to Hoover, from Exxon to Max Factor, manufacturers have typically developed much more capital efficient techniques for controlling distribution. See Godley and Fletcher, "Impact of Foreign Multinationals".

42 Godley, "Pioneering FDI".

43 See T. Puttnam, "The Sewing Machine Comes Home," in The Culture of Sewing, Burman; and R. Thomson, The Path to Mechanized Shoe Production in the United States, (Chapel Hill, 1989) on technology.

44 P. Johnson, Saving and Spending (Oxford, 1985); L. Calder, Financing the American Dream (Princeton, 1999), chapter 4.

45 See articles in Red "S" Review, for example, September 1919, pp.26-7.

46 Carstensen, American Enterprise, chapter 1, on Woodruff's innovation. See also the internal correspondence, for example, Woodruff to Clark, 19 May 1877; McKenzie to Clark, 29 Mar. 1879; McKenzie to Woodruff, 16 Apr. 1879 (all from Box 93/9); and McKenzie to New York, 11 May 1882, and 27 May 1882, complaining of the relatively poor performance of the US retail organization compared to UK (SA, Microreel 2013, reel 63. I am indebted to Kristine Bruland for these sources).

47 This contrasts with the emphasis in Chandler, Visible Hand, and Davies, Peacefully Working, on ever increasing standardization in the international retail organization. See Red "S" Review, various issues, 1919-1921, reports on business conditions in foreign markets for evidence of diversity.

48 Carstensen, American Enterprise, chapters 4 and 5, on Russian developments; Red "S" Review for Sweden and elsewhere.

49 An interesting footnote to this is the company's explanation for a disappointing performance in India in the 1880s, that it was due to the prevailing social customs that hindered access to women in their homes. See Davies, Peacefully Working, p.89.

⁵⁰ Church, "Ossified or Dynamic?" esp. pp.8-9.