Cotton Textiles and Industry in Latin America: from 'de-industrialisation' to 're-industrialisation', c.1800-1939

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Preliminary draft, please do not quote

'The availability of impoverished labour is not a sufficient condition for the launching of an industrial cycle in textiles and apparel.'
J. Singleton *The World Textile Industry* (London 1997) p.23.

Introduction

The paper is divided into four sections. It opens with a stylised chronology of industrial growth in Latin America. This provides a context in which to apprise the emergence of modern cotton textile manufacture. The main argument is that the 'industrial' production of cotton goods occurred during the period of export-led growth, and represented a rupture with the 'factory' system of cloth making in the colonial period - namely in sweatshops (*obrajes*). Despite this rupture, the history of the *obrajes* is considered at some length because the failure of these businesses to effect a transition to modern manufacture provides insights into discussions about the market and the 'quality' of entrepreneurship. The second section details the quantitative and qualitative growth of the market, and explores regional variations in degrees of marketisation. It concludes that, for most parts of the continent, 'national' markets only emerged towards the end of the nineteenth century. The third section looks at the supply-side: labour, entrepreneurship, capital and raw material supply. This section charts changes in the location, scale and structure of cotton textile manufacture in several economies, though concentrates on Brazil and Mexico, the countries with the largest spinning and weaving capacity by c.1900. The last section examines 'failure', namely, the inability of mills based in Latin America to penetrate international markets during the period studied, notwithstanding apparent comparative advantages like raw material availability and low cost labour. To frame these discussions, the paper draws on theories of entrepreneurship and the firm.

Industry: descriptions and periodisation

Around 1900, the term 'modern industry' in Latin America implied processing rather than manufacture and, in particular, processing for overseas markets[1]. This 'definition' excludes the output of entities such as (lingering) sweatshops, plantation-based 'factories' (producing artefacts and clothing for on-estate consumption), the craft output of Indian village communities, and household handicraft production. For much of the colonial period and the early nineteenth century, these entities had been the main suppliers of locally produced 'manufactures', and were to be found throughout the continent. Although most of the sweatshops were located in the Andes and New Spain (Mexico), their products were widely traded from California to Buenos Aires[2.] *Obrajes* were large, integrated production units, sometimes concentrating hundreds of workers - slaves, Indian forced labour and 'free' labourers - in a single space that combined all stages of the production process. They 'manufactured' mainly (woollen) textiles, though occasionally ceramic ware, leather artefacts, and equipment. Imposing structures, *obrajes* contained shearing and carding (or ginning) rooms, sections for spinning and weaving, dying and fulling pits (and sometimes space for producing dye), and warehouses and shops, as well as accommodation for workers, including kitchens and dispensaries - and a chapel[3]. These 'factories' produced course

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[1] For illustration, see: F. Alayza Paz Soldan *La Industria: estudio económico, técnico y social* (Lima 1933) and E. Tornquist *The Economic Development of the Argentine Republic in the Last Fifty Years* (Buenos Aires 1919). These works devote considerably more space to the 'agricultural industry', the 'cattle industry', the 'coal industry', the 'mining industry', the (Paraguayan) 'tea industry', the 'wool industry', and so forth, than 'manufacturing industry'..

[2] M. Miño Grijalva '¿Proto-industria colonial?' in M.Fennell Mazzaoui (ed.) *Textiles: production, trade and demand* (Aldershot 1998) pp.81-2.

[3] R. J. Salvucci *Textiles and Capitalism in Mexico: an economic history of the obrajes, 1539-1840* (Princeton 1987) pp.34-9, 98-101; M. Miño Grijalva '¿Proto-industria colonial?' in

cloth and blankets, supplying a large, growing section of the markets that consumed neither imported fine cloth nor cotton textiles produced in Indian villages[4]. Whether *obrajes* were 'embryonic factories' constituting a proto-industrial platform for fully-fledged industrialisation, or a dead-end, remains a mater of debate - though an emerging consensus points to the latter. There is general agreement that machine-based industrial production, which drew increasingly upon new technology transferred to Latin America from overseas, and refined there, only emerged fitfully during the nineteenth century. Yet, towards the end of the nineteenth century, when contemporary observers spoke of the advanced state of industry, they referred primarily to enterprises such as central sugar mills, meat packing plant, nitrate *oficinas* and mining complexes. These were large scale, capital-intensive units of production employing the advanced technology of the day. At this point, such expressions of large-scale modern business were over-whelmingly foreign-owned. Firms producing for local markets were usually small and labour intensive, though speedily incorporating new technologies of manufacture. Most had been established by merchants and immigrants.

Some modern cotton manufacturing plant had been set up around the time of Independence (1810s-1820s), but most experienced a chequered existence, few surviving the upheavals of the following half-century. In short, discontinuity characterized the history of modern domestic manufacturing until the last quarter of the century. Only after the 1870s did factory-based, machine-made lines of goods such as textiles, footwear, and food products begin to displace domestic output - and imports. By the end of the nineteenth century, factories supplying basic wage goods to the home market were complemented by the workshops and repair depots of utility companies and railways which fabricated imported components and occasionally

M.Fennell Mazzaoui (ed.) *Textiles: production, trade and demand* (Aldershot 1998) p.81.
[4] R. J. Salvucci *Textiles and Capitalism in Mexico: an economic history of the obrajes, 1539-1840* (Princeton 1987) pp.32-45.

manufactured equipment. After c.1900, the scale of production of basic products began to change. Items like textiles, footwear, foodstuffs and beverages were beginning to be produced on a scale that rivalled that of export processing. Breweries in the Argentine (Quilmes), Brazil (Antártica) and Mexico (Cuauhtémoc) were among the largest in the world. They produced beer and carbonated drinks on an industrial scale, using imported machinery, and operated their own glass-making plant and distribution networks. Similarly, the largest textile mills in Brazil and Mexico integrated virtually every stage of cotton manufacture from plantation to retail emporia. In the larger economies, the range of manufactures also expanded to include intermediate goods such as industrial oils, dyestuffs, and chemicals alongside non-durable consumer products and a limited schedule of 'capital goods'[5.] Rapid growth in the production of durable consumer goods was mainly observed during the middle third of the twentieth century.

'Spurts' in industrial production immediately before the First World War, and in the mid-1920s, focussed on manufacturing for the internal market, were also associated with a growing presence of transnational corporations. A number of these corporations were engaged in the production of capital goods - looms and spinning machinery for the textile industry and sewing machines for shoe-making, a development that points to the size of local manufacture[6]. In the largest economies by the inter-war period, and elsewhere from the 1950s, industrial growth was principally driven by the manufacture of motor vehicles, electrical goods and pharmaceuticals, sectors in which foreign corporations held a comparative advantage. After the 1960s there was renewed emphasis on intermediate goods production and some resurgence of

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5 A. Dorfman *Evolución industrial argentina* (Buenos Aires 1942); S. Haber *Industry and Underdevelopment: the industrialization of Mexico, 1890-1940* (Stanford 1998); C. M. Lewis 'Industry in Latin America before 1930' in L. Bethell (ed.) *The Cambridge History of Latin America, Vol. IV* (Cambridge 1986); W.Suzigan *Indústria brasileira: origem e desenvolvimento* (São Paulo 1986).

6 D.M. Phelps *Migration of Industry to South America* (New York 1936) pp232-5; S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) p.148.

heavy industry, notably in the state sector. However, only during the 1970s, and then mainly in Mexico and Brazil, was there evidence of a steady expansion in the absolute and relative importance of capital goods production. By the 1980s, the industrial sector had been transformed. Manufacturing was probably the lead sector (though not necessarily the largest) in all the major and medium sized economies. In the most advanced republics, manufacturing was increasingly integrated into the domestic economy (save in the case of the *maquila* in-bond production), large-scale units of production prevailed, output was diverse, and manufactures were beginning to account for an increasing share of exports - albeit growing from a small base[7.]

While the elaboration of a generalised chronology tends to conflate national or regional specifics, several fairly distinct sub-periods in the industrial history of Latin American can be identified. A stylised chronology would distinguish the following 'phases':(i) post-Independence 'de-industrialisation', a period of sharp re-adjustment for various expressions of colonial manufacture that witnessed largely unsuccessful attempts to establish modern industry; (ii) export-driven industrial growth from c.l870 to around the First World War, decades characterised by institutional modernisation, the development of infrastructure and domestic demand expansion, when internal manufacture of basic wages goods complemented (but did not displace) imports; (iii) 'autonomous' industrialisation during the inter-war decades (but only in some of the larger markets), when increasing volatility in the foreign trade enabled firms with excess capacity - and access to capital - to capture a larger share of a contracting markets and to diversify into new lines of production; (iv) the classic phase of import-substituting industrialisation dating from the 1940s (or possibly the 1930s) until the 1960s when forced industrialisation - led by the production of consumer durables and some inter-mediate products - became a

[7] P. Evans *Embedded Autonomy: states and industrial formation* (Princeton 1995); F. Fajnzlber *Industrializacón e internacionalización en América Latina* (Mexico 1980); Rh.O. Jenkins *Transnational Corporations and Industrial Transformation in Latin America* (London 1984); D.M. Phelps *Migration of Industry to South America* (New York 1936).

near continental policy goal; and (v) the final third of the twentieth century, a period characterised by both industrial deepening and de-industrialisation within a context of global re-insertion, from which modern, diversified, domestically integrated manufacturing sectors emerged in some economies, possibly assisted by export-orientated manufacturing. This stylisation indicates that cotton textiles (along with other wage goods) constituted the 'lead-sector' of domestic manufacture from approximately the 1860 to the 1930s.

The Domestic Market

On the eve of Independence, c.1810, there were about 20 million Latin Americans. The total population of the continent was approximately the same as that of Great Britain and double that of the USA. New Spain was the most populous region with some seven million inhabitants concentrated mainly in the centre of the viceroyalty. Brazil ranked second with about four millions, largely settled along the coast: about 40 percent of the total population was located in the north-east, a further 40 percent in the south, with the balance scattered in the interior, mainly Minas Gerais, which was the only inland province to boast relatively large clusters of population. There were inland concentrations of population in the Andes: Lower Peru and Upper Peru (Bolivia) had something over one million inhabitants each. With the exception of these areas, the population of each of the successor states that emerged from the collapse of Iberian authority was less - in many regions substantially less - than one million. Even in relatively populous areas, settlements lay separated by distance and natural barriers[8.] Geography fractured markets.

[8] T. Halperín Donghi *The Contemporary History of Latin America* (London 1993) pp.22-23, 36-37; J.H. Coatsworth 'Economic and Institutional Trajectories in Nineteenth-century Latin America' in J.H. Coatsworth & A.M. Talor (eds.) *Latin America and the World Economy since 1800* (Cambridge, Mass. 1998) pp.28-29; A. Maddison *The World Economy: a millennial perspective* (Paris 2001) pp.233-6; V. Bulmer-Thomas *The Economic History of Latin*

Many post-Independence regimes were acutely aware that lack of population represented a check on economic development (*fomento*). Scarcity of population was also viewed as a threat to national security: the existence of large tracks of unpopulated land might invite the attention of relatively more populous neighbours or foreign powers. In the half-century following Independence there were several, largely unsuccessful, attempts to promote immigration[9]. Although overseas immigrants were drawn to the continent in large numbers after the 1870s, all countries did not participate equally in the process. Migrants flowed principally to the fertile frontier zones of temperate South America. Between the 1840s and the 1930s the Argentine and Brazil became respectively the second and third most popular destinations of emigrants from Europe after the USA. But these two countries attracted only 20 percent of inter-continental migrants compared with approximately 60 percent captured by the USA. Until the trans-Atlantic traffic was brought to an end in the early 1850s, there were also large imports of slaves into Brazil and Cuba. As many as two million slaves may have landed in Brazil between the 1810s and the 1850s, and possibly half a million in Cuba[10]. Natural rates of population growth appeared to have picked up across the continent during the 1880s. This, coupled with modest success in attracting immigrants, meant that the total population of the continent in 1900 was 62 million, compared with 76 million for the USA[11]. Only after the 1930s, with the exception of the Argentine and Uruguay and, to a lesser extent Chile, did population begin to grow rapidly, exhibiting 'Third World' rates of increase[12].

America since Independence (Cambridge 2003) p.21.

[9] D. Bushnell *Reform and Reaction in the Platine Provinces, 1810-1852* (Gainesville 1983) pp.9-11, 96-7; T. Halperín Donghi *The Contemporary History of Latin America* (London 1993) pp.97-101; D. Bushnell and N. Macaulay *The Emergence of Latin America in the Nineteenth Century* (Oxford 1994) pp.72, 87, 152, 162-3, 226-7.

[10] A. Maddison *The World Economy: a millennial perspective* (Paris 2001) pp.35, 37.

[11] R. Thorp *Progress, Poverty and Exclusion: an economic history of Latin America in the 20th Century* (Washington 1998) p.1. (The population figure given in the statistical appendix for 1900 is 62 million, see p.313.)

[12] R. Thorp *Progress, Poverty and Exclusion: an economic history of Latin America in the 20th*

The population of Latin America as a whole reached parity with the USA in the 1940s and exceeded the US figure by 1950 with totals of 165 millions and 152 millions respectively. By the end of the twentieth century, the population of Latin America was almost double that of the USA[13].

Demographic growth, however, is hardly a proxy for the expansion of the market. For much of the nineteenth century and beyond, market scope and depth was limited by more than sluggish population growth and the scattered nature of settlements. Effective demand was constrained by a combination of factors like slavery, subsistence and socio-ethnic divisions which frustrated market integration and homogenisation. Poverty and inequality were both a function and cause of sluggish growth and an additional check on market consolidation. While several countries abolished slavery at Independence, and virtually all-new states acceded to international agreements prohibiting the transatlantic slave trade at some point during the 1820s or 1830s, the institution of slavery persisted in attenuated form in a number of regions. In the Andean and River Plate republics, abolition was only effected fitfully between the 1830s and early 1850s, while slavery continued in Brazil and Cuba until the 1880s[14]. Slaves produced for the market, but hardly participated in it. Although the size of the subsistence sector defies measurement, there can be little doubt that in the Andean economies, parts of Central American, and in Mexico a large proportion - possibly the greater part - of the population remained outside the money economy until at least the 1880s[15]. Even thereafter, many groups (isolated Indian village communities and plantation workers) may have raised commodities for international trade,

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Century (Washington 1998) pp.22-23; A. Maddison *The World Economy: a millennial perspective* (Paris 2001) p.126.

[13] A. Maddison *The World Economy: a millennial perspective* (Paris 2001) p.241.

[14] D. Bushnell *Reform and Reaction in the Platine Provinces, 1810-1852* (Gainesville 1983); D. Bushnell and N. Macaulay *The Emergence of Latin America in the Nineteenth Century* (Oxford 1994).

[15] T. Halperín Donghi *The Contemporary History of Latin America* (London 1993) p.99; D. Bushnell and N. Macaulay *The Emergence of Latin America in the Nineteenth Century* (Oxford 1994) p.289.

but their connexion with the home market remained tenuous. Mining and plantation sectors in Mesoamerica, the Andes, north-east Brazil and the circum-Caribbean, employing servile labour in routine-bound tasks, were frequently self-sufficient operations that developed few linkages with the wider, national economy. Profits generated via the world market by these activities provided funds for initiatives that may have had an indirect impact upon domestic demand growth in the long run, but there was little direct or immediate stimulus to market expansion.

Ethnic and social divisions further fragmented the market. Although nineteenth-century Latin America was a far more socially egalitarian environment for Indians and non-whites than the colonial period, the market remained segmented: there was a strong correlation between race - possibly class - and pattern of consumption[16]. Racial discrimination survived. Inequalities of rights and civil status - in practice if no longer sanctioned by law - fragmented both society and the market, notwithstanding the liberal discourse prevalent in nineteenth century Latin America[17]. Extreme inequalities of wealth, and very low levels of literacy, further evidenced limits on market engagement. As well as pointing to the quality of human capital, levels of schooling and literacy serve as a proxy for equality of economic and political rights and of opportunities - and of ability to participate in the market. Low school enrolments and limited access to schooling indicates high levels of inequality, and weak integration with the market, in many parts of Latin America until well into the nineteenth century[18].

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[16] D. Bushnell and N. Macaulay *The Emergence of Latin America in the Nineteenth Century* (Oxford 1994) pp.51, 53;A.J. Bauer *Goods, Power, History: Latin America's material culture* (Cambridge 2001) p.110.

[17] J.H. Coatsworth 'Economic and Institutional Trajectories in Nineteenth-century Latin America' in J.H. Coatsworth & A.M. Talor (eds.) *Latin America and the World Economy since 1800* (Cambridge, Mass. 1998) pp.39-43.

[18] S.L. Engerman & K.L. Sokoloff 'Colonialism, Inequality and Long-run Paths of Development' mimeo. 2004, pp.11-12, Table 2; N.H. Leff *Underdevelopment and Development in Brazil: Vol II: Reassessing the Obstacles to Economic Development* (London 1982) pp.57-8, 134-5.

Data on wages is limited and fragmentary, but the information that exists tends to points to a slow deterioration in real purchasing power in most regions during the half-century following Independence. This is corroborated by very low rates of growth per capita, that must have limited income expansion, irrespective of further negative market implications resulting from acute income and wealth inequality[19]. Only for the Argentine is there virtually incontrovertible evidence of sustained, if uneven, absolute gains in real incomes for the post-1830s period, and of income per capita convergence with the developed economies between 1870 and 1913[20]. In addition, mass immigration to the River Plate suggests favourable wage comparisons with much of western and southern continental Europe. This points to rising real incomes and market deepening. For Mexico, the evidence is gloomy, though not uncontested, depending on constructions placed on non-wage payments to *hacienda* workers. Did usufruct rights to plots of land in exchange for labour services, and payments in kind, represent a neo-feudal labour arrangement, or protect workers against food staple price hikes? According to some estimates, real wages may have fallen by a half between the 1870s and 1910. Katz argues that in the south, where contract labour and debt peonage prevailed, conditions approximated slavery. On *haciendas* in the populous central parts of the country, there was a precipitate fall in real wages over the porfiriato[21].

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[19] A. Maddison *The World Economy: a millennial perspective* (Paris 2001) p.126.

[20] J.C. Brown 'Revival of the Rural Economy and Society in Buenos Aires' in M.D. Szuchman & J.C. Brown (eds.) *Revolution and Restoration: the rearrangement of power in Argentina, 177-1860* (Lincoln 1994) pp. 256, 258-9; R.D. Salvatore 'Height and Welfare in late-Colonial and Postindependence Argentina' in J. Komlos & J. Baten (eds.) *The Biological Standard of Living in Comparative Perspective* (Stuttgart 1998); R.D. Salvatore & C. Newland 'Between Independence and the Golden Age: the early Argentine economy' in G. Della Paolera & A.M. Taylor (eds.) *A New Economic History of Argentina* (Cambridge 2003) pp.33-4, 35-7; R. Cortés Conde *El progreso argentino, 1880-1914* (Buenos Aires 1979) pp.xx; J.C. P. Gerchunoff & L. Llach *El ciclo de la ilusión y el desencanto: un siglo de políticas econónomicas argentinas* (Buenos Aires 2003) pp.557; G. Della Paolera & A.M. Taylor 'Introduction' in G. Della Paolera & A.M. Taylor (eds.) *A New Economic History of Argentina* (Cambridge 2003) p.3.

[21] K. Katz 'Condiciones de trabajo en las haciendas de México durante el profiriato: modalidades y tendencias' in E. Cárdenas (ed.) *Historia económica de México* (Mexico 1992) pp.126-33, 135, 144-5. For less gloomy views, see S. Miller 'Mexican Junkers and Capitalist

In Chile, as in Mexico, highly concentrated patterns of land ownership, and the capital intensive nature of modern mining reduced employment opportunities, while population growth and the pressure of export commodity production on the availability of land for raising food staples may have triggered inflation that eroded the real value of wages which adjusted only tardily - if at all - to price increases. For the middle third of the nineteenth century, there is little indication of an improvement in real wages in Chile. Only with the nitrate boom (after 1883), and semi-distributionist government expenditure on the economic and social infrastructure is there evidence of positive gains in real purchasing power[22]. Conventionally, it is argued that real per capita incomes remained low and stagnant for virtually the whole of the nineteenth century in Brazil, depressed by slavery, immigration and, possibly, a ‘reserve army of labour’ which, although wedded to subsistence, periodically flooded the labour market, for example when there was drought in the backlands[23]. Yet, with the rapid expansion of the coffee frontier in São Paulo after c.1870, wages in the centre-south increased in real terms, despite mass immigration[24]. Consequently, for the greater part of the continent during the half-century or so following Independence, doubts remain about the extent to which population growth signalled a dramatic expansion of the market.

Nonetheless, after the 1880s, demographic growth presaged a horizontal expansion of the market, even if there was little qualitative deepening, save in the Southern Cone. In addition, there is agreement that

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Haciendas, 1810-1910' *Journal of Latin American Studies* XXII 2 (1990) pp.229-63 and A. Gómez Galvarriato ‘The Evolution of Prices and Real Wages in Mexico from the Porfiriato to the Revolution’ in J.H. Coatsworth & A.M. Taylor (eds.) *Latin America and the World Economy since 1800* (Cambridge, Mass. 1998) pp.347-78.

[22] M.J. Mamalakis *The Growth and Structure of the Chilean Economy: from Independence to Allende* (New Haven 1976); M. Monteón *Chile in the Nitrate Era: the evolution of economic dependence, 1880-1930* (Madison 1982).

[23] N.H. Leff *Underdevelopment and Development in Brazil: Vol II: Reassessing the Obstacles to Economic Development* (London 1982) pp.10-11.

[24] T. H. Holloway *Immigrants on the Land: coffee and society in São Paulo, 1886-1934* (Chapel Hill 1980); N.H. Leff *Underdevelopment and Development in Brazil: Vol II: Reassessing the Obstacles to Economic Development* (London 1982) p.10.

export-led growth facilitated monetisation, and a slow consolidation of a wage economy. Two factors were primarily responsible for monetisation: inflation and export growth *per se*. This implies that monetisation - and the outward movement of the 'money frontier' - may have occurred earlier in some areas, and discontinuously in others. In many regions, funding the state meant inflation, a mechanism 'discovered' during the revolutionary and post-Independence conflicts[25]. The end of European empire in Spanish America signalled the disintegration of, geographically, the largest fiscal and monetary union in world history. More to the point, imperial collapse triggered a fiscal crunch. The colonial fiscal structure had been highly centralised, with tax rich regions (normally established mining centres) subsidising weaker (usually outlying, or newly constituted) jurisdictions. Thus colonial administration and defence in Cuba and the Philippines were financed by transfers from the royal exchequer (*caja real*) in Mexico. Cartagena was funded from New Granada (Bogotá). The Viceroyalty of the River Plate (Buenos Aires) was subsidised by Upper Peru (Bolivia)[26]. At the beginning of the revolutionary period, royalists tended to hold the principal *cajas reales*. Transfers to outlying areas ceased. And even where insurgents gained control of fiscally lucrative regions, there was little incentive to maintain the colonial practice of transfers. In the absence of colonial subsidies, strapped-for-cash insurgent administrations and successor governments cast around for alternative sources of income. The choice was limited. Colonial expedients (for example, the Indian poll tax, state tobacco and salt monopolies, forced loans, and a multitude of excise duties) were continued in many places, even if they offended liberal sentiments espoused by revolutionary elites, but

[25] S.E. Amaral ' El descubrimiento de la financiación inflacionarias, Buenos Aires, 1790-1830' Investigaciones y Ensayos XXXVII (1988) 379-417.

[26] M.A. Irigoin 'Macroeconomic Aspects of Spanish American Independence: the effects of fiscal and currency fragmentation, 1800s-1860s' Universidad Carlos III, Madrid, Department of Economic History and Institutions Working Paper 03-45, (Madrid 2003) pp.4, 10.

rarely yielded as much as in the days of empire[27]. The main fiscal innovations were opening the ports to free trade (and taxing imports), and printing money. Inflation - and conscription into the military - drew people into the money economy and the market, notwithstanding negative aspects of monetary volatility - regressive distributional impacts and macroeconomic instability. The growth of British exports to the River Plate was a direct function of the monetisation of the local economy, as much as the lower prices of factory-made goods, and the disruption of internal trade routes that kept competing regionally produced items out of the market. Not that local products were entirely displaced, such was the growth of the market[28]. Given the context of abundant land, a vent-for-surplus effect appears to have been at work. Having developed a taste for imported goods, even modest households redirected resources so as to sustain the consumption of imports after the knockdown prices that had prevailed in glutted markets of the 1820s began to rise[29]. In Córdoba, for example, domestic workers in the woollen textile putting-out system were paid in kind with imported European goods, mainly cotton textiles[30].

Across the River Plate region, and possibly Chile, the growth and diversification of export production from about the 1830s onwards, coupled with reports of labour mobility and worker 'indiscipline', indicate a sustained capacity to consume imports. Regional specialisation in various lines of export commodities, along with the expansion of the frontier of settlement, explains not only the volume growth in exports, but also implies the monetisation of interior, rural districts which were now drawn into national and international circuits of production and consumption[31]. Elsewhere, evidence

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[27] D. Bushnell *Reform and Reaction in the Platine Provinces, 1810-1852* (Gainesville 1983).
[28] T. Halperín Donghi *Politics, Economics and Society in Argentina in the Revolutionary Period* (Cambridge 1975) pp.87-91.
[29] D.C.M. Platt *Latin America and British Trade, 1806-1914* (London 1972) pp.12-13, 20-21.
[30] C.S. Assadourian *El sistema de la economía colonial: el mercado interior, regiones y espacio economico* (Mexico 1983), pp.342-55.
[31] R.D Salvatore 'The Breakdown of Social Discipline in the Banda Oriental and the Littoral,

tends to suggest a general process of market monetisation, and the consolidation of a money/wage economy only during the last third of the nineteenth century. Institutional changes in Mexico during the regime of Porfirio Díaz (1877-1911) facilitated unprecedented export-led growth. The main reforms, which strengthened property rights, included a new Commercial Code, enacted in 1884, Limited Liability legislation, in 1888, Patent Law, revised in 1890 and 1903, the stream-lining of taxation - mainly by abolishing excise duties (the *alcabala*) in 1896, and the General Banking Act of 1897 which sought to inject greater liquidity into the local capital market. And, tempering liberalism with pragmatism, foreign investment was encouraged through the allocation of franchise, concession and subsidies, particularly in railways, mining and oil[32]. The result was commodity diversification and regional specialisation which yielded a dramatic volume and value growth in exports[33]. The result, notwithstanding reservations expressed by Katz, was a slow monetisation of the system, and the emergence of a waged workforce[34].

1790-1820' in M.D. Szuchman & J.C. Brown (eds.) *Revolution and Restoration: the rearrangement of power in Argentina, 177-1860* (Lincoln 1994) pp.75-8, 82, 83, 90-92; E. Cavieres *Comercio chileño y comerciantes ingleses, 1820-1880: un ciclo de historia económica* (Santiago 1988) pp.117-51; R. Schmit & M.A. Rosal 'Las exportaciones del litoral argentino al puerto de Buenos Aires entre 1873 y 1850' *Revista de Historia Económica* XII 3 (1995) 581-601; R. Schmit 'Enlances conflictivos: comercio, fiscalidad y medios de pago en Entre Ríos durante la primara mitad del siglo XIX' in M.A. Irigoin & R. Schmit (eds.) *La desintegración de la economía colonial: comercio y monda en el interior del espacio colonial, 1800-1860* (Buenos Aires 2003) pp.231-76; R.D. Salvatore & C. Newland 'Between Independence and the Golden Age: the early Argentine economy' in G. Della Paolera & A.M. Taylor (eds.) *A New Economic History of Argentina* (Cambridge 2003) pp.27-31.

[32] C. Marichal 'Avances recientes en la historia de las grandes empresas y su importancia para la historia económica de México' in C. Marichal & M. Cerutti (eds.) Historia de las grandes empresas en México, 1850-1930 (Mexico 1997) p.30; E. Beatty *Institutions and Investment: the political basis of industrialization in Mexico before 1911* (Stanford 2001) pp.34-39; R. Weiner *Race, Nation and Market: economic culture in Porfirian Mexico* (Tuscon 2004) p.13.

[33] F. Rosenzweig 'El desarrollo económico de México de 1877 a 1911' in E. Cárdenas (ed.) *Historia económica de México* (Mexico 1992) pp.59-60, 61;J. Zabludowsky 'La depreciación de la plata y las exportaciones' E. Cárdenas (ed.) *Historia económica de México* (Mexico 1992) pp.306-7; E. Beatty *Institutions and Investment: the political basis of industrialization in Mexico before 1911* (Stanford 2001) p.39;R. Weiner *Race, Nation and Market: economic culture in Porfirian Mexico* (Tuscon 2004) p.13.

[34] E. Beatty *Institutions and Investment: the political basis of industrialization in Mexico before 1911* (Stanford 2001) pp.4, 27; R. Weiner *Race, Nation and Market: economic culture*

Between 1880 and 1911, money supply in Mexico grew more than eleven-fold, while prices approximately doubled[35]. A wage/money economy was also emerging slowly in Brazil, and similarly reflected in inchoate efforts by workers to organise[36]. After the 1870s, wage/money economies were in a process of consolidation throughout the continent, driven by the process - and political economy of - effective incorporation into the international economy. The market for consumer goods expanded apace[37].

Railways were, of course, a key mechanism integrating national markets and (with steamships) connecting Latin America to the global economy. Assessments of the impact of railways on domestic market formation now tend towards the positive, stressing significant social savings and the institutional significance of infrastructure modernisation for domestic agents, not least local industrialists. For Brazil, Summerhill argues that before the construction of railways, product and labour markets were disjointed, levels of activity low and the output mix reflected the general inefficiency of economic organisation. 'Of the myriad impediments confronting the economy, none was more oppressive than the state of internal transport.'[38]. Railway building resolved this constraint and changed the trend rate of growth c.1900. Others have advanced similar arguments for Mexico. While debate continues about methods of railway financing, about the cost and efficiency of services, and about whether government should have become involved earlier as a regulator

in Porfirian Mexico (Tuscon 2004) pp.75-8; 13.

[35] F. Rosenzweig 'El desarrollo económico de México de 1877 a 1911' in E. Cárdenas (ed.) *Historia económica de México* (Mexico 1992) p.63. The doubling of prices, while nominal wages for many groups of workers remained fairly static after the 1890s, underpins the real wage decline thesis.

[36] N.H. Leff *Underdevelopment and Development in Brazil: Vol II: Reassessing the Obstacles to Economic Development* (London 1982) pp.57-8, 131, 133; T.E. Skidmore *Brazil: five centuries of change* (New York 1999) pp.86-88.

[37] T.F. O'Brien *The Revolutionary Mission: American enterprise in Latin America, 1900-1945* (Cambridge 1996) pp.38-43, 53-4; A.J. Bauer *Goods, Power, History: Latin America's material culture* (Cambridge 2001) pp.129-64.

[38] W.R. Summerhill Order against Progress: government, foreign investment and railroads in Brazil, 1854-1913 (Stanford 2003) p.187. See also: N.H. Leff *Underdevelopment and Development in Brazil: Vol II: Reassessing the Obstacles to Economic Development* (London 1982) pp.100-1, 116, 117-8.

and operator of the system, few would now challenge the position of Coatsworth. Namely, for a backward economy like Mexico, railways were indispensable[39.] By the 1890s, the railway system was triggering an exponential growth in demand for transport services[40]. Contemporary opinion in the Argentine, Brazil, Mexico and elsewhere certainly assumed that the 'transport and communications revolution' symbolised by the railways and the telegraph would 'make' domestic markets[41]. More recently, Bauer has written that, 'The opening of internal markets by the extension of railroads changed the geography of production. Iron rails lay behind the appearance of modern national textile and flour milling industries, and because railroads carried coal for steam engines in the new factories and mills, neither were dependent, as they had been, on hydraulic sources of power.'[42].

Railways may also have served as a model of modern corporate organisation. Most railways were financed by government or registered overseas as freestanding companies. Nevertheless, in virtually all countries, the first lines were formed by groups of domestic capitalists, usually merchants, sometimes landowners. Only in Brazil and Cuba was there a substantial, enduring local investment in railway building and operation. Yet, irrespective of whether they were domestically privately owned, or financed from overseas,

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[39] J.H. Coastworth 'Los ferrocarriles, indispensables en una economía atrasada: el caso de México' in E. Cárdenas (ed.) *Historia económica de México* (Mexico 1992) pp.201-29; S. Kuntz Ficker 'La mayor empresa privada del porfiriato: el Ferrocarril Central Mexicano, 1880-1907' in C. Marichal & M. Cerutti (eds.) *Historia de las grandes empresas en México, 1850-1930* (Mexico 1997) pp.39-64; A. Grunstein Dicker 'Surgimiento de los Ferrocarriles Nacionales de México, 1900-1913: ¿era inevitaables la consolidación monopólio' in C. Marichal & M. Cerutti (eds.) *Historia de las grandes empresas en México, 1850-1930* (Mexico 1997) pp.65-106.

[40] S. Kuntz Ficker 'La mayor empresa privada del porfiriato: el Ferrocarril Central Mexicano, 1880-1907' in C. Marichal & M. Cerutti (eds.) *Historia de las grandes empresas en México, 1850-1930* (Mexico 1997) pp.53, 61.

[41] R. Weiner *Race, Nation and Market: economic culture in Porfirian Mexico* (Tuscon 2004) pp.50-1; C.M. Lewis 'Railways and Industrialisation: Argentina and Brazil, 1870-1929' in C. Abel & C.M. Lewis (eds.) *Latin America: economic imperialism and the state* (London 1985) PP.201-5.

[42] A.J. Bauer *Goods, Power, History: Latin America's material culture* (Cambridge 2001) p.141.

railway companies constituted a new way of organising and doing business. They were the first manifestation of relatively large, capital intensive, impersonal form of corporate organisation[43]. Echoing Bauer, Rocchi argues the achievement of a near countrywide trunk rail network in the Argentine by the 1890s gave *porteño* industrialists confidence to 'conquer' the national market[44]. The economic crisis of the early 1890s forced manufacturers in Buenos Aires to look beyond the concentrated market of the city and province, the railway network provided them with the means to do so. In the interior, domestic and handicraft production was displaced by factory goods made in Buenos Aires, shipped by rail companies anxious to secure a return freight for commodity exports. Of course, railways were a mixed blessing. By the inter-war decades, textile mills in southern Brazil were protesting about loss of market share to larger manufacturers based in São Paulo, firms that were taking advantage of the improvement in rail communications to penetrate neighbouring regional markets[45]. Presumably *paulista* textile mills were more efficient than *gaúcha*.

The size, location, and structure of the market was critical to the early development of the modern textile industry - in Latin America no less than elsewhere. The growth of the money economy in the centre-south of Brazil induced a shift in the location of production. Until the mid-nineteenth century, mills were concentrated in the northeast. This is explained by proximity to

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[43] W. Dean *The Industrialization of São Paulo, 1880-1945* (Austin 1969) pp.35-7; V. Blinn Reber *British Mercantile Houses in Buenos Aires, 1810-1880* (Cambridge, Mass. 1979) pp.123-7; C.M. Lewis 'The Financing of Railway Development in Latin America, 1850-1914' *Ibero-Amerikanisches Archiv* IX 3/4 (1983) 225-78; Z.M. Cardoso dell Mello *Matamorfoses da riqueza: São Paulo, 1845-1895* (São Paulo 1990) pp.79-80, 131-41; S. Kuntz Ficker 'La mayor empresa privada del porfiriato: el Ferrocarril Central Mexicano, 1880-1907' in C. Marichal & M. Cerutti (eds.) *Historia de las grandes empresas en México, 1850-1930* (Mexico 1997) pp.39-40.

[44] F. Rocchi El péndulo de la riqueza: la economía argentina en el período 1880-1916' in M.Z. Lobato (ed.) *Nueva historia argentina: el progreso, la modernización y sus límites, 1880-1916* (Buenos Aires 2000) pp.58-60 and 'Consumir es un placer: la industria y la expansión de la demanda en Buenos Aires al vuelta del siglo pasado' *Desarrollo Económico* 148 (2000) 533-58.

[45] H. Jochims Reichel A indústria têxtil do Rio Grande do Sul, 1910-1930 (Porto Alegre 1980) pp.72, 73-80.

both raw material supply and market. Raw cotton was grown in the north and north-east of the country. Local production was largely geared to a captive segment of the market - slaves. Until the expansion of coffee cultivation in the south, the bulk of the slave population was centred in the sugar zone in and around the province of Bahia. In the early nineteenth century, plantations concentrated land and labour on the production of sugar, buying in cheap local cotton cloth for the workforce. Urban centres were supplied mainly by imports; up-country markets by handicraft and domestic production. By the 1880s, the centre of gravity of textile manufacture had shifted south. In the mid-1860s, five of the nine cotton mills in Brazil were situated in the city of Bahia: twenty years later, only 12 of 48 mills were located there. In 1885, 13 mills were operating in Minas Gerais, 12 in Rio de Janeiro, and nine in São Paulo. Mills in the south were larger and employed more advanced technology[46]. Coffee had displaced 'decadent' sugar as the main export commodity, the population of coffee districts was growing rapidly, and mills in the centre-south were better placed to take advantage of the expanding rail network and coastal steamer service to supply up-country districts. As in the Argentine, local manufacture displaced handicraft and homespun cloth - as well as imports - in interior markets. Similar trends occurred elsewhere. In part this was a function of physical market integration propelled by railway construction. It was also due to price and quality improvement of local factory produced cloth, and a gradual weakening - notably at the bottom end of the market - of the prejudice against national industry[47].

Irrespective of the nature and mechanisms of market consolidation after

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[46] S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.35-8.

[47] C.S. Assadourian *El sistema de la economia colonial: el mercado interior, regiones y espacio economico* (Mexico 1983), pp.35,p.355; E. Beatty *Institutions and Investment: the political basis of industrialization in Mexico before 1911* (Stanford 2001) p.194; S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.78-80, 81-2; F. Rocchi El péndulo de la riqueza: la economía argentina en el período 1880-1916' in M.Z. Lobato (ed.) *Nueva historia argentina: el progreso, la modernización y sus límites, 1880-1916* (Buenos Aires 2000) pp.58-60.

c.1880, there is little doubt that the consumption of manufactures grew substantially. Whether the expansion of demand was largely quantitative, driven by population growth and monetisation, or qualitative, involving increasing real purchasing power, marketisation had a disproportionate impact on the consumption of basic wage goods. Textiles were among the principal beneficiaries. As late as the inter-war period, clothes and footwear probably remained the principal item of household expenditure after food and shelter[48]. This explains why, in the 1920s, textiles remained a significant item of imports at the same time as cotton textile mills constituted the largest branch of domestic manufacture in many countries[49]. The paradox of the primacy of cotton textiles in the import schedule, and position as the dominant branch of industry was hardly peculiar to Latin America. Textiles and clothing have been consumed - and produced - in all parts of the world for many thousands of years. Even in developed economies, until quite recently, the manufacture of clothing still took place within the household[50]. Arguably, what makes the continent distinct is that factory production came late and that Latin America has hardly featured as a major international supplier of cloth - as opposed to fibres. Although some are major producers, and many benefit from the comparative advantage of domestic raw material supply, Latin American countries are conspicuous by their absence from the list of major world exporters of textiles until the very end of the twentieth century[51].

[48] A.J. Bauer *Goods, Power, History: Latin America's material culture* (Cambridge 2001) pp.157-60; S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) p.165 - a 1939 survey gave the following schedule of average household expenditure in urban centres, Housing - 21.1%, Food - 55.3%, Clothing - 8.9%, the proportions for rural households were 13.5%, 65.9% and 10.% respectively.
[49] A.J. Bauer *Goods, Power, History: Latin America's material culture* (Cambridge 2001) pp.140-1.
[50] J. Singleton *The World Textile Industry* (London 1997) p.12.
[51] Labour Office *The World Textile Industry: economic and social problems: vol. I* (Geneva: Studies & Reports Series B No. 27, 1937) pp.70-102; J. Singleton *The World Textile Industry* (London 1997) pp.14-17.

The Supply Side

By the 1930s, cotton textile production was a significant branch of manufacturing in many Latin American economies, especially in those where the industrial sector already accounted for a substantial share of total output.

Manufacturing as a share of GDP (%), 1939

The Argentine:	22.7
Brazil:	14.5
Chile:	18.1
Colombia	9.1
Mexico	16.0
Peru:	10.0
Uruguay	15.9

Source: V. Bulmer-Thomas *The Economic History of Latin America since Independence* (Cambridge 2003) p.221.

In Brazil in 1939, textiles, clothing and footwear represented 27.1 percent of total industrial output, food products, the second largest sub-category, some 24.2 percent: even before the 1929 crash, domestic mills were supplying 90 percent of apparent cloth and clothing consumption[52]. The structure of industrial production in Brazil was not so different from that of other 'middle ranking' Latin American countries, nor, indeed, from that of the Argentine - by far the largest, and most industrialised economy of the region. In 1939, textiles and clothing accounted for 20.1 percent of total Argentinian industrial output, second only to food and beverages, which provided 28.9 percent of the total, with local suppliers dominating the national market[53].

Textile Manufacturing (Spinning) in c.1939

	Factories	Spindles (000)	Output (000 metric tonnes

[52] A. Villela *Escritos Selecionadas* (Brasilia 2000) pp.196-7, 211.
[53] M. Rapoport *Historia económica, política y social de la Argentina, 1880-2000* (Buenos Aires 2000) pp.320-1.

The Argentine	22	331	29
Brazil	411	3070	N/a
Colombia	N/a	211	N/a
Chile	N/a	40	N/a
Mexico	57	125*	N/a
Peru	N/a	88	N/a
Uruguay	N/a	93	N/a
Venezuela	N/a	77	N/a

Source: E. Cobos *La industria algodonera en Iberoamérica* (Madrid 1953) pp.125, 132, 135, 138, 162, 164. N/a. not available; * this data for Mexico does not accord with that in other studies of the period.

At the end of the 1930s, the cotton textile industry appeared to have become a solid feature of the industrial sector in many countries. Although common phenomena like export-led industrial expansion in the pre-1914 period, and import-substitution during the 1930s, explain the growth of cotton textile production, fragmentary data in the above table shows marked difference in the size and scale of the cotton textile industry from country to country. In addition, on the eve of the Second World War, production was hardly of global significance. Only Brazil and Mexico registered on an international scale, accounting for 1.8 and 0.6 percent of the world stock of spindles, respectively, compared with 27.3 percent for the UK, 18.6 percent, the USA, 7.2 percent, Japan, 6.7 percent, Germany, 6.5 percent, France, 6.4 percent, India, in 1936[54].

Taking the growth of the market as given, how is the emergence of the modern textile industry in Latin America - and the overwhelming focus on the domestic market - to be explained? How did supply-side factors shaped the position and profile of the industry from the 1830s to the 1930s? In what respects did labour supply, entrepreneurship, capital, and raw material availability influence the structure and efficiency of the sector? Answers to

[54] International Labour Office *The World Textile Industry: economic and social problems: vol. I* (Geneva: Studies & Reports Series B No. 27, 1937) pp.70-102; J. Singleton *The World Textile Industry* (London 1997) pp.4-9.

the questions may resolve the conundrum of the 'lateness' of modern cotton textile manufacture in Latin America, and the failure to manufacture for export.

'Lateness' and the 'failure' of export production are particularly perplexing given the long history of domestic (and market) production of cotton textiles - and the growth of fibre exports. An indigenous plant, cotton had been woven in parts of Latin America since prehistoric times. Major centres of cloth production appear to have been the Pacific coast of what would become Peru, some distance from densely settled Andean highlands, and Central America[55]. According to Spanish chroniclers, at the time of the Conquest men were primarily responsible for spinning and weaving in the home in South America. In Mesoamerica cloth was produce in the household by women. In addition to domestic handicraft production, in both areas textiles of remarkably high quality were also produced outside the home, usually by guilds or collectives of female weavers in what were described as state 'factories'[56]. With the arrival of the Spaniards, the pre-Columbian systems tribute involving the supply of raw cotton and cloth were incorporated into the *encomienda* arrangement and the royal tax structure[57]. And, as indicated above, by the seventeenth century, *obrajes* had become an established feature of the colonial economy, though never eliminated household production. With the introduction of sheep it is probable that the output of woollen cloth grew exponentially, particularly in the Andes where llama and alpaca wool had been used to produce fabric before the Conquest[58].

By the late colonial period, with the exception of some regions in Mesoamerica, textile production had come to mean largely the spinning and

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[55] A.J. Bauer *Goods, Power, History: Latin America's material culture* (Cambridge 2001) pp.26-27, 34-5.

[56] E. Cobos *La industria algodonera en Iberoamérica* (Madrid 1953) pp.99-100; D. Keremitsis *La industrial textil mexicana en el siglo XIX* (Mexico 1973) pp.9-10; A.J. Bauer *Goods, Power, History: Latin America's material culture* (Cambridge 2001) pp.32, 34, 37, 39-40.

[57] A.J. Bauer *Goods, Power, History: Latin America's material culture* (Cambridge 2001) pp.52-3.

[58] A.J. Bauer *Goods, Power, History: Latin America's material culture* (Cambridge 2001) pp.110-1

weaving of wool, partly for subsistence but increasingly for the market. The predominance of wool in local production may, in part, explain the huge surge in demand for imports of cheap, high quality, more comfortable, easy to wash cotton goods at the beginning of the nineteenth century[59]. With Independence, cotton fabric would make up by far the largest item of imports - and of British exports to the continent. In the mid-1820s cotton textiles constituted more than half total British exports to Latin America, probably substantially more if re-exports through Caribbean entrepôts are included[60]. However, before the collapse of Iberian power in the Americas, the production of raw cotton was on the increase in coastal hotlands, triggered by increasing local cloth production and the textile revolution in Europe[61]. With a demonstrable demand for cottons, and proven capacity to increase raw cotton production, was the scene set for 'cotton textile industrialisation'? What light does the supply side shed on the post-1830s history of cotton textile production in Latin America?

i) Labour supply

As indicated above, Latin America cannot be characterised a labour rich region - even following the 'population explosion' of the 1950s and 1960s when countries like Brazil, Colombia Mexico and Peru manifest some of the highest rates of population growth in the world[62]. While, by the 1970s, population densities were very high in Haiti and parts of Central America, elsewhere

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[59] A.J. Bauer *Goods, Power, History: Latin America's material culture* (Cambridge 2001) pp.110, 146-7.

[60] R. Miller *Britain and Latin America in the Nineteenth and Twentieth Centuries* (London 1993) p.73; A.J. Bauer *Goods, Power, History: Latin America's material culture* (Cambridge 2001) pp.130.

[61] M. Miño Grijalva '¿Proto-industria colonial?' in M.Fennell Mazzaoui (ed.) Textiles: production, trade and demand (Aldershot 1998) pp.83-4.

[62] A. Maddison *The World Economy: a millennial perspective* (Paris 2001) p.242: annual rates of population growth in Mexico average 3.11 percent through the 1950s and 1960s, compared with 2.10 and 2.11 for China and India respectively; the 1950-1973 continent annual average rates of population growth are, for Latin America, 2.73 percent, and for Asia (excluding Japan) 2.19 percent.

population/usable land ratios remained low by international standards. Rapid urbanisation - and the on-going process or rural-urban migration - which has characterised the continent since the 1930s is explained by policies of import-substituting industrialisation, and highly skewed patterns of land ownership, rather than land scarcity *per se*. Again, as indicated above, and certainly until the inter-war crisis, contemporaries continued to regard the continent as under-populated.

Even in the eighteenth century, with renewed population growing prefiguring recovery from the demographic collapse of the immediate post-Conquest period, accounts emphasise labour scarcity. It is a moot point whether, in relatively densely populated area, the problem was one of an insufficiency of labour supply or of an underdeveloped labour market. Were prospective employers unwilling (or unable) to offer a wage sufficient to create/clear the market? During the eighteenth and nineteenth centuries, anecdotal evidence - traveller accounts and official reports - present dual images of scarcity and an indolent, itinerant work force. While complaining about lack of labour availability, *obraje* owners defended low wages on the basis of production costs and worker preference. Substitutes - cloth from the handicraft sector and imports - limited what consumers would pay for locally produced woollens[63]. Hence, argued colonial *obraje* owners, raising wages would simply price their goods out of the market. Owners also subscribed to prevailing wage theory: worker demand for money was limited. Increasing wages (even if that were possible) would reduce the supply of labour as there was little workers needed to purchase in the market. Free wage labour and market incentive would not realise the required supply of labour[64]. The principal characteristics of the workforce were ethnic (and to some extent,

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[63] E. Beatty *Institutions and Investment: the political basis of industrialization in Mexico before 1911* (Stanford 2001) p.194. Artisans and domestic handicraft workers probably supplied most consumer demand for textiles in Mexico until well into the late nineteenth century.
[64] R. J. Salvucci *Textiles and Capitalism in Mexico: an economic history of the obrajes, 1539-1840* (Princeton 1987) pp.97-8.

social) diversity, and its coerced nature. Depending on period and place, the mix of *obraje* workers generally included the follow categories: Indians, *castas*, indentured 'apprentices', slaves and convicts[65]. A similar profile endured in the early national period with, probably, an even higher proportion of the workforce composed of the ubiquitous widows and orphans, as complains about the quality and scarcity of labour continued[66].

The structure and character of late colonial and early nineteenth century textile mills in Brazil differed little from that of Mexican *obrajes*. Until the 1850s, and reflecting the general structure of the 'labour market', textiles mills in the north-east relied mainly on slave labour: non-slave workers were described as 'costly and inefficient'[67]. After the 1860s, as the rapid expansion of coffee cultivation in São Paulo bid slaves away from other regions and from the urban economy, textile mills tended to employ 'free' workers, mainly women and 'apprenticed' children[68]. Labour recruitment was a recurrent concern of *mineiro* cotton mills in the 1870s. Besides drawing on a pool of 'free' rural and craft workers, the mills employed slaves, 'conditionally' freed slaves, *libertos*, 'indentured' labourers (*inquilinos operários*), and generally 'marginal' groups - minors, widows and orphans[69]. Here, as in the provinces of Rio de Janeiro and São Paulo, there was a tendency to construct worker barracks. Whether this was due to the rural location of many of the early mills (often described as *fábrica-fazenda*), a desire to instil discipline, or labour

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65 R. J. Salvucci *Textiles and Capitalism in Mexico: an economic history of the obrajes, 1539-1840* (Princeton 1987) pp.104-11.
66 D. Keremitsis *La industrial textil mexicana en el siglo XIX* (Mexico 1973) pp.27; G.P.C. Thomsom *Puebla de los Angeles: industry and society in a Mexican city, 1700-1850* (Boulder 1989) p.198; S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) p.122; W.Suzigan *Indústria brasileira: origen e desenvolvimento* (São Paulo 1986) p.118. The ability to recruit 'cheap girls' was reported as a cost advantage enjoyed by rural mills.
67 S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.63-4;
68 W.Suzigan *Indústria brasileira: origen e desenvolvimento* (São Paulo 1986) p.118.
69 E. Von der Weid & A.M. Rodrigues Bastos *O fio da meada: estratégia de expansão de uma indústria têxtil: Companhia América Fabril, 1878-1930* (Rio de Janeiro 1986) p.161; D. Giroletti *Fábrica: convento e disciplina* (Brasilia 2002) pp.106-10.

scarcity, continues to be debated[70]. Certainly it was a solution to problems of recruitment and retention, and security of daily labour supply. As late as the 1930s, it was observed that the development of the Brazilian cotton textile was being held back by labour scarcity - ' ... as much on account of quality as quantity ...', and employers continued to inveigh against worker ineptitude and lack of motivation, though the credibility of these protests may be questioned[71].

Employer complaints about native worker indolence and indiscipline echoed throughout Latin America, and were a constant of the period. Soon after Independence, *estancieros* in Uruguay lamented that revolution had triggered a breakdown in social discipline: workers had become radicalised, and the existence of an open frontier meant that it was easy for them to exercise preferences for a 'free' life[72]. On both banks of the River Plate, there were repeated attempts, as there had been during the colonial period, to enforce vagrancy laws, requiring workers to demonstrate proof of employment, on pain of conscription[73]. Also, as in Brazil, the other side of this argument was that labour was 'expensive' and 'scarce'[74]. From the 1820s to the 1880s,

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[70] E. Von der Weid & A.M. Rodrigues Bastos *O fio da meada: estratégia de expansão de uma indústria têxtil: Companhia América Fabril, 1878-1930* (Rio de Janeiro 1986) pp.157-8; S. de O. Birchal *Entrepreneurship in Nineteenth-century Brazil: the formation of a business environment* (London 1999) pp.50-6. Both texts stress the rural location of many early mills, often located on the fazendas of the principal shareholders.

[71] E. Cobos *La industria algodonera en Iberoamérica* (Madrid 1953) pp.129;W. Dean *The Industrialization of São Paulo, 1880-1945* (Austin 1969) pp.152-3.

[72] R.D Salvatore 'The Breakdown of Social Discipline in the Banda Oriental and the Littoral, 1790-1820' in M.D. Szuchman & J.C. Brown (eds.) *Revolution and Restoration: the rearrangement of power in Argentina, 177-1860* (Lincoln 1994) pp. 82-4.

[73] J.C. Brown 'Revival of the Rural Economy and Society in Buenos Aires' in M.D. Szuchman & J.C. Brown (eds.) *Revolution and Restoration: the rearrangement of power in Argentina, 177-1860* (Lincoln 1994) pp. 262-4; R.D Salvatore 'The Breakdown of Social Discipline in the Banda Oriental and the Littoral, 1790-1820' in M.D. Szuchman & J.C. Brown (eds.) *Revolution and Restoration: the rearrangement of power in Argentina, 177-1860* (Lincoln 1994) pp. 80-2.

[74] J. Gelman 'Las condiciones del crecimiento estanciero en el Buenos Aires de la primera mitad del siglo XIX: trabajo, salarios y conflictos en las estancias de Rosas' in J. Gelman, J.C. Garavaglia & B. Zeberio (eds.) *Expansión capitalista y transformaciones regionales: relaciones sociales y empresas agrarias en la Argentina del siglo* XIX (Buenos Aires 1999) pp.86-98; R.D Salvatore 'The Breakdown of Social Discipline in the Banda Oriental and the Littoral, 1790-1820' in M.D. Szuchman & J.C. Brown (eds.) *Revolution and Restoration: the rearrangement of power in Argentina, 177-1860* (Lincoln 1994) pp.90, 92.

officials and travellers in the Argentine and Brazil commented on the movement of people in rural areas: workers were observed to be perpetually on the move, and usually described as vagrants[75]. The assumption was that natives lacked the capacity - discipline - for regular work, and were culturally opposed to selling their labour. The same refrain was still to be heard at the other end of the continent at the beginning of the twentieth century. Espousing Darwinian racial determinism, Porfirian ideologues represented the Indian as an inferior worker due to 'antiquated customs' which spelt an inability to acquire a capitalist work ethic[76]. At the beginning of the modern textile age, Mexican mill owners looked abroad for labour, certainly skilled and sometimes unskilled[77]. Similarly, mill owners in Brazil sought to recruit immigrant workers, who were valued for their 'discipline', and not only for skilled positions. Stein labels one of the earliest cotton mills a 'cosmopolitan factory': the workforce of the Santo Aleixo mills consisted of 17 Brazilians, five Italians , two English, two North Americans and 83 Germans[78]. While Santo Aleixo may have been exceptional in the proportion of foreigners employed, its efforts to secure immigrant workers were not[79].

Recent scholarship has convincingly turned the view of labour indolence and scarcity on its head, arguing that the problem was a lack of work, not workers. In largely rural economies, jobs were highly seasonal. Was it that

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[75] S.E. Amaral The Rise of Capitalism on the Pampas: the estancias of Buenos Aires, 1785-1870 (Cambridge 1998) ; M.L. Lamounier

[76] R. Weiner *Race, Nation and Market: economic culture in Porfirian Mexico* (Tuscon 2004) pp. 26, 35-41.

[77] D. Keremitsis *La industrial textil mexicana en el siglo XIX* (Mexico 1973) pp.27, 64-5; M. Trujillo Bolio 'La fábrica La Magdalena Contreras, 1836-1910: una empresa textil precursora en el valle de México' in C. Marichal & M. Cerutti (eds.) *Historia de las grandes empresas en México, 1850-1930* (Mexico 1997) pp.245-74.

[78] S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.64, 65-6. Not all accounts of native labour were negative. Stein records a view in the 1870s that Brazilians were to be prefered to foreigners as they prepared to work for relatively low salaries, were frugal and industrious, were easy to control and to recruit, see S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) p.67.

[79] S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.64, 65-6.

labourers would only remain in one place for a little over three months, or was the problem that only a few months work was available?[80]. Workers, led a nomadic existence because there was insufficient employment to keep them in one place. Hence, survival depended on a capacity to secure a subsistence on the frontier. Irregularity of work was not simply a feature of the rural sector. Millwork was also precarious. The early history of the modern cotton textile industry in Mexico and Brazil demonstrates how unstable the demand for labour was, not least due to a low survival rate among firms, and intermittent operation[81]. The financial foundations of many early firms were shaky. Delays in constructing plant were not unusual - blamed on the weather, as much as shortage of funds. Once built, mills might operate only part-time, due to lack of raw material or power. Disruption of production, lay-offs and closure were not unusual. Birchal notes the intermittent production, and short working life of several early *mineiro* enterprises[82]. Small-scale enterprises were particularly vulnerable in volatile markets, or prone to adverse operating conditions. Poor communications (roads impassable during the rainy season), which prevented factories getting products to market, was another cause of short-time working and failure. Water-powered mills of Puebla were equally liable to disruption during the dry season, or subject to the vagaries of the market, or simply bad luck. La Constancia Mexicana, the first modern cotton-spinning factory in Mexico was established in Puebla in 1832 with a loan from the official development bank, the Banco de Avío, to finance the purchase

[80] J. Gelman 'Las condiciones del crecimiento estanciero en el Buenos Aires de la primera mitad del siglo XIX: trabajo, salarios y conflictos en las estancias de Rosas' in J. Gelman, J.C. Garavaglia & B. Zeberio (eds.) *Expansión capitalista y transformaciones regionales: relaciones sociales y empresas agrarias en la Argentina del siglo* XIX (Buenos Aires 1999) p.95; R.D Salvatore 'The Breakdown of Social Discipline in the Banda Oriental and the Littoral, 1790-1820' in M.D. Szuchman & J.C. Brown (eds.) *Revolution and Restoration: the rearrangement of power in Argentina, 177-1860* (Lincoln 1994) p.76.

[81] S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.41,43-8, 49-50; G.P.C. Thomson *Puebla de los Ángeles: industry and society in a Mexican city, 1700-1850* (Boulder 1989) pp.58, 240-6, 267-9.

[82] S. de O. Birchal *Entrepreneurship in Nineteenth-century Brazil: the formation of a business environment* (London 1999) pp.84-9.

of imported machinery. Over the next three years, events conspired to frustrate the project: cholera decimated the workforce employed in building the mill, machinery was lost at sea, and the delivery of equipment delayed by civil war. Despite these disasters, the firm was responsible for the salaries of foreign technicians. It was four years before the first yarn was produced, and then the company claimed that survival depended on the prohibition of imports. High capital costs, bottlenecks in raw cotton supply, and occasional shortages of water contributed to the catalogue of difficulties confronting early mills[83]. Factory work was as irregular as the market was volatile. Little wonder that workers would not jeopardise subsistence by wholly committing to the labour market. Nevertheless, employers who recognised the rationality of worker survival strategy did not find it so difficult to obtain labour[84].

For whatever reason, labour was a critical and enduring problem for the mills. Various solutions to problems of labour supply and quality were deployed by mill owners. Indeed, rural location was sometimes regarded as a solution to both problems. It is no surprise that the first mills in Mexico were set up in Puebla and the valley of Mexico. Probably founded in the late 1830s, La Magdalena was located close to the capital in an area where *obrajes* had clustered in the colonial period. This suggests that the district enjoyed not only reasonably good communication with Mexico City, the most important urban market in the country but, more importantly, a supply of 'textile' workers. The area was also a centre of flour milling, again suggesting the availability of 'factory' labour and water power[85].

The issue of labour quality (training, as well as 'discipline') was addressed in several ways. As indicated above, mills in the valley of Mexico,

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[83] G.P.C. Thomsom *Puebla de los Angeles: industry and society in a Mexican city, 1700-1850* (Boulder 1989) p.240-9.

[84] M.A. Lamounier

[85] M. Trujillo Bolio 'La fábrica La Magdalena Contreras, 1836-1910: una empresa textil precursora en el valle de México' in C. Marichal & M. Cerutti (eds.) *Historia de las grandes empresas en México, 1850-1930* (Mexico 1997) pp.248-51; G.P.C. Thomson *Puebla de los Ángeles: industry and society in a Mexican city, 1700-1850* (Boulder 1989) p.240-6.

Puebla, Rio de Janeiro, Minas Gerais and São Paulo recruited workers overseas, not exclusively skilled workers, and established worker barracks. Foreign workers were generally regarded as better suited to factory life. Nevertheless, as in other countries, before the general application of steam power, location and patterns of labour recruitment were powerful influences determining the construction of worker accommodation. Because mills were often sited in rural areas, and single women and children made up a large proportion of the workforce, perforce mills had to provide living accommodation[86]. Regarded as docile and cheaper, women and children had to be 'respectably' housed, and schools provided for children - at least in theory. Perhaps reflecting the legacy of the *obrajes*, virtually all early Mexican mill compounds contained several rows of worker housing. Only towards the end of the century was there a tendency in some areas for housing provision to be reduced[87]. A counter-tendency is observed in Brazil, where worker

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[86] G.P.C. Thomson *Puebla de los Ángeles: industry and society in a Mexican city, 1700-1850* (Boulder 1989) pp.336; D. Giroletti *Fábrica: convento e disciplina* (Brasilia 2002) pp.106-10, 119-22; S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.64, 68; E. Von der Weid & A.M. Rodrigues Bastos *O fio da meada: estratégia de expansão de uma indústria têxtil: Companhia América Fabril, 1878-1930* (Rio de Janeiro 1986) p.221; D. Keremitsis *La industrial textil mexicana en el siglo XIX* (Mexico 1973) pp.209-10;International Labour Office *The World Textile Industry: economic and social problems: vol. I* (Geneva: Studies & Reports Series B No. 27, 1937) pp.223, 224. Weid & Rodrigues Bastos maintain that textile production had been considered almost exclusively 'womens' work' since the colonial period but, with the coming of the modern mill, women had lost ground to men. They provide data for the Cruzerio mill in 1921as follows: males - 67 percent, females - 33 percent, but these proportions do not differentiate between adults and children - under 13-year olds may have represented about 12 percent. It is not clear how representative the Cruzeiro factory was. Keremitsis estimates that, in 1880, women composed around 39 percent of the workforce in the cotton textile industry, and children approximately 22 percent. Around 1900, these proportions seem to have been maintained in individual factories, that is, women and children made up between 50 and 60 percent of the labour force, though a national estimate for 1890 places the proportion men at 75 percent, with women and children accounting for an equal share of the balance. Most sources accept that the proportion of women and children in the Mexican industry was lower than that in Great Britain and the USA. For 1930, the ILO gives the proportion of women in the textile industry workforce as 65.1 percent for Brazil ('children' [under 21 years] as 35.5 percent), and 22.6 percent for Mexico.

[87] G.P.C. Thomson *Puebla de los Ángeles: industry and society in a Mexican city, 1700-1850* (Boulder 1989) pp.334-5; M. Trujillo Bolio 'La fábrica La Magdalena Contreras, 1836-1910: una empresa textil precursora en el valle de México' in C. Marichal & M. Cerutti (eds.) *Historia de las grandes empresas en México, 1850-1930* (Mexico 1997) pp.258, 268.

barracks gave way to ‘worker villages’. By the end of the nineteenth century, emphasis was placed on modest behaviour and respectability. Workers should be properly dressed and were to be discouraged from consuming alcohol: the model factory required model workers who would be housed in model developments[88]. By the 1920s, the more profitable modern Brazilian mills appear to have been virtually company towns, or whole city districts, including a range of housing appropriate to status of the employee/worker (or barracks for the unmarried), chapels, schools (with attached residences for teachers), pharmacies, and clubs[89].

Investment by mill-owners in the construction of company towns and factory suburbs addressed more than questions of the physical supply of labour and ‘discipline’. The projects were designed to solve problems of labour quality and productivity. New, productive workers would be forged in salubrious model towns and well-regulated factories. Productivity and quality had become important by the inter-war decades as labour costs in the textile sector were reckoned to be high[90]. Although textile workers wages in Brazil were said to be closer to Japanese than European levels in the 1930s, thereby explaining the success of the *paulista* industry, employers retorted that relatively low money wages were complemented by various fringe benefits, including educational, medical and recreational facilities for workers and their

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[88] D. Giroletti *Fábrica: convento e disciplina* (Brasilia 2002) pp.271-89, 317-24; E. Von der Weid & A.M. Rodrigues Bastos *O fio da meada: estratégia de expansão de uma indústria têxtil: Companhia América Fabril, 1878-1930* (Rio de Janeiro 1986) p.157&ff; W. Dean *The Industrialization of São Paulo, 1880-1945* (Austin 1969) pp.154-6.

[89] E. Von der Weid & A.M. Rodrigues Bastos *O fio da meada: estratégia de expansão de uma indústria têxtil: Companhia América Fabril, 1878-1930* (Rio de Janeiro 1986) pp.157-95. Weid & Rodrigues Bastos provide a wealth of evidence showing the transformation of *fábrica-fazendas* into worker-towns, and the construction of factory-districts, from the 1880s to the 1920, exploring the logic behind owner investment in ‘company towns’ and ‘company suburbs’.

[90] E. Beatty *Institutions and Investment: the political basis of industrialization in Mexico before 1911* (Stanford 2001) p.49; E. Von der Weid & A.M. Rodrigues Bastos *O fio da meada: estratégia de expansão de uma indústria têxtil: Companhia América Fabril, 1878-1930* (Rio de Janeiro 1986) p.263.

families[91]. Textile wages in Mexico at the beginning of the twentieth century may have been lower than in the USA and Great Britain, but workers were considerably less productive[92]. By the 1920s, employers in Brazil and Mexico also viewed with distaste the beginnings of state involvement in worker welfare - factory safety and the provision of social benefits. Model towns - and the range of facilities offered - were a pre-emptive welfare measure, and designed to recruit, train, and retain a reliable workforce.

In conclusion, although mills owners were probably confronted by a far from perfect labour market in the immediate post-Independence period, there is evidence of spatial and occupational mobility by the late nineteenth century, not that this necessarily points to the formation of national (as opposed to regional) labour markets. In areas such as southern Brazil and the River Plate, after the 1880s, immigration injected considerable elasticity into labour supply and probably enhanced the quality of human capital - immigrants were more literate than the local population. It is difficult to sustain the labour 'scarcity' thesis advanced by nineteenth-century employers. Rather, they were unwilling - or considered themselves unable - to pay wages at a level that would secure workers. There is also little evidence that labour costs were low. Recruiting foreigners, and the slow process of training - and retaining - workers in an increasingly competitive *urban* labour market by c. 1900 would suggest that labour was not 'cheap'. Productivity enhancing measures like the building of 'model towns' to address the problems of labour availability and quality were costly, long-term solutions, and tied up scarce capital.

ii) Entrepreneurship

If the fate of the *obrajes* at the beginning of the nineteenth century

[91] W. Dean *The Industrialization of São Paulo, 1880-1945* (Austin 1969) pp.152-6.
[92] E. Beatty *Institutions and Investment: the political basis of industrialization in Mexico before 1911* (Stanford 2001) p.49. Keremitsis calculates that wages in Mexico in 1900 were approximately the same as in Eastern Europe, but lower than in Britain and less than a half of those in the USA: see D. Keremitsis *La industrial textil mexicana en el siglo XIX* (Mexico 1973) p.199.

reflects the quality of entrepreneurship in Latin America, the outlook for a textile take-off was bleak. Bauer advances a scathing criticism. If, after centuries of abundant raw material supply and an expanding market, imported British textiles were highly competitive with local cloth at the time of Independence, domestic entrepreneurs were a signal failure[93]. Salvucci is more direct: ' ... no obraje in Mexico provided a direct link to technologically advanced forms of production'[94]. The *obraje* was not an embryonic factory and did not signal proto-industrialisation. Thomson, a more sympathetic observer, equally acknowledges that Puebla, the first region in the New World to acquire a broad base of industries, introduced by European artisans, and using European technology, and comparable at the beginning of the nineteenth century to eastern Pennsylvania and parts of New England, was neither a proto-industrial nor an industrialising region[95].

Obraje entrepreneurial failure is, indeed, startling. Around 1800, New Spain was the richest, most economically diversified, and most populous colony in the Americas. By the end of the eighteenth century, at around $30 million pesos, agriculture was already contributing more to the economy than mining, which accounted for $22/24 million, and there were established centres of manufacturing. Mexico was the largest city in the New World, though not necessarily the biggest market[96]. This should have made the new empire/republic the most likely starting point for modern, textile-led industrial growth in post-Independence Latin America. Yet all sources chart the decline of *obraje* production in the first half of the nineteenth century. Between 1808

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[93] A.J. Bauer *Goods, Power, History: Latin America's material culture* (Cambridge 2001) pp.131-2, 141, 146.

[94] R. J. Salvucci *Textiles and Capitalism in Mexico: an economic history of the obrajes, 1539-1840* (Princeton 1987) p.4.

[95] G.P.C. Thomson *Puebla de los Ángeles: industry and societyin a Mexican city, 1700-1850* (Boulder 1989) pp.33-4.

[96] T. Halperín Donghi *The Contemporary History of Latin America* (London 1993) pp.7-8; J.H. Coatsworth 'Economic and Institutional Trajectories in Nineteenth-century Latin America' in J.H. Coatsworth & A.M. Taylor (eds.) *Latin America and the World Economy since 1800* (Cambridge, Mass. 1998) p.35.

and 1831, capital invested in *obrajes* declined from $800,000 pesos to $100,000[97]. State aid designed to re-activate the sector (largely textile production in and around the cities of Puebla and Mexico) in the 1830s produced mixed results, but was largely unsuccessful. While there is agreement on the precarious position of these traditional ‘factories’, there is much less consensus about the reasons for the apparent inability of sweatshops to effect a transition to modern factory. For some, the problem derives from the archaic structure of the businesses. They were moribund entities, reflecting a general lack of entrepreneurial capacity in society at large. Independence provoked a lethal flight of (Spanish) entrepreneurial talent - and capital - that re-enforced rent-seeking tendencies already firmly embedded by the end of the colonial period: corporate and mercantile attitudes survived Independence, any hint of economic recovery simply strengthening a desire on the part of corporate organisation to recapture privilege. Others find evidence of potential, if limited entrepreneurial initiative that was frustrated by shallow factor and final consumption markets. Firms imported machinery and successfully competed in the market against cheap foreign cloth until changes of government brought instability, the end of state subsidies, a credit squeeze, and opposition from politically active artisans who resented the loss of status (and income) associated with the introduction of machinery and factory discipline[98]. Political instability and market fragility frustrated entrepreneurial initiative.

So, who were the post-1820s textile capitalists? If not from *obrajes*, where did they originate? Although writing explicitly about São Paulo, the

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[97] E. Beatty *Institutions and Investment: the political basis of industrialization in Mexico before 1911* (Stanford 2001) p.27.

[98] C. Marichal ‘Avances recientes en la historia de las grandes empresas y su importancia para la historia económica de México’ in C. Marichal & M. Cerutti (eds.) *Historia de las grandes empresas en México, 1850-1930* (Mexico 1997) pp.23-4; G.P.C. Thomson *Puebla de los Ángeles: industry and societyin a Mexican city, 1700-1850* (Boulder 1989) pp.45-6, 230-8; D. Keremitsis *La industrial textil mexicana en el siglo XIX* (Mexico 1973) pp.11-19 ;A.J. Bauer *Goods, Power, History: Latin America’s material culture* (Cambridge 2001) pp.132, 146.

Dean thesis of export-led industrial expansion and entrepreneurial formation - and of industrialisation pre-dating the 1930 'adverse shock' - is now widely regarded as a signal contribution of broad relevance[99]. It consists of three elements. First, as suggested above, export boom established the pre-conditions for industrialisation, creating a money-market economy and the basic institutions of modernisation - industrial spurts correlated with periods of rapid export growth. Secondly, that the *paulista* planter bourgeoisie was capitalist and innovative, but not necessarily industrialist, largely investing in coffee production and activities ancillary to coffee - banks, railways, and the production of agricultural equipment. Thirdly, that the immigrant bourgeoisie - foreign merchants and immigrant entrepreneurs - were responsible for the early development of manufacturing. In time, the two bourgeoisies merged to form an industrial entrepreneuriat that 'caused' the industrialisation of São Paulo and, as such, were a force for economic and social modernisation[100]. Recent research has qualified and deepened the Dean thesis. It has been shown by the 'Campinas school' that individual *paulista* coffee planters invested in industrial firms. In short, that even before the 'fusion' of the mercantile and planter bourgeoisies noted by Dean, there was a strong engagement with manufacturing on the part of *fazendeiros*. Further research has also demonstrated that manufacturing developed in areas that were not <u>directly</u> engaged in export production. In short, a capitalist class was in formation in several regions of the country, and was investing in industry, particularly textile manufacture.

To what extent can the Dean thesis - and it refinements - be extrapolated further? Is it a useful framework to explore the origin and evolution of a

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[99] W. Dean *The Industrialization of São Paulo, 1880-1945* (Austin 1969), esp. PtI: economic and social origins of entrepreneurship, 1880-1914. For assessment of the impact of Dean, see: W.Suzigan *Indústria brasileira: origem e desenvolvimento* (São Paulo 1986) pp.23-44; S. de O. Birchal *Entrepreneurship in Nineteenth-century Brazil: the formation of a business environment* (London 1999) pp.21-3; S. Haber 'Introduction: economic growth and Latin American economic historiography' in Stephen Haber (ed.) *How Latin America Fell Behind: essays on the economic histories of Brazil and Mexico, 1800-1914* (Stanford 1997).

[100] W. Dean *The Industrialization of São Paulo, 1880-1945* (Austin 1969) p.14.

‘textile entrepreneuriat’ in Latin America? Some case studies may provide the clues. The history of the Fábrica La Magdalena Contreras points to factors essential for success. Probably founded in the late 1830s in the valley of Mexico, the company was set up as a private partnership by a small network of Mexicans and foreigners related by marriage, and cemented by trust established through earlier trading ventures. The three principal partners were Antonio Garay, Lorenzo Carrera, and Archibald Hope. Fellow industrialists-cum-financiers completed the list of shareholders. Garay was a politically well-connected merchant and banker: sometime Minister of Finance, and member of the Colonisation Commission and Commission for Industries, he was also one of the concessionaires of the government tobacco monopoly. Originally from Spain, Carrera had interests in trade, land and mining, as well as the mill. Hope, a British businessman who had already constructed textile mills in Mexico, was responsible for day-to-day management at La Magdalena. The mill produced both cotton and woollen cloth. Modern machinery had been purchased, and skilled machinists recruited, overseas. In addition to cotton and woollen mills, around the mid 1850s, the factory compound included a church and worker barracks. The business encountered serious financial problems in late 1850s and early 1860s, a period of renewed civil war and foreign intervention. Overloaded with debt, the firm was successfully restructured and refinanced. By the 1870s, La Magdalena was the second largest producer of coarse cloth and blankets (*manta*) in the country, and appears to have been profitable thereafter. The independent history of the firm came to an end in 1898. It was purchased by a French consortium that was engaged in financing vertical and horizontal integration in the textile sector: Meyran, Donnadieu y Cia. bought up several mills, consolidated retail outlets, and invested in generating electricity for its factories[101].

[101] M. Trujillo Bolio ‘La fábrica La Magdalena Contreras, 1836-1910: una empresa textil precursora en el valle de México’ in C. Marichal & M. Cerutti (eds.) *Historia de las grandes empresas en México, 1850-1930* (Mexico 1997) pp.245-74.

Estevan de Antuñano was already an established merchant-manufacturer by the 1820s. He exported raw cotton through Veracruz, and dealt in cloth. With one of the periodic bans on the import of yarn, he established a modern spinning factory in the port in 1821. A year later he was reported as owning plant in Puebla. During the 1820s and 1830s Antuñano pioneered the mechanisation of spinning, anticipating a ready demand for mechanically produced yarn from artisan weavers, and also moved into weaving. He became the virtual mouthpiece of the industrial lobby. Several of his textile ventures were part funded by loans from the state development bank, and notwithstanding liberal sentiments, he regularly petitioned for-and-against the import of raw cotton, and cotton yarn and cloth, depending on the price and quality of local raw cotton and yard, and whether or not his spinning or weaving factories were in production. Antuñano variously owned the largest textile plant and flourmill in Puebla, and had investments in iron foundries and paper mills. By the 1830s, he was active in most aspect of cotton textile production: growing raw cotton, ginning, spinning, weaving and running a wholesale cloth business. Some operations were conducted on his own account, other in partnership with fellow merchant-manufacturers[102].

The brothers Manuel and Antonio Escandón were prominent, but nonetheless representative, members of a new group of ascendant industrialists of the period. Born respectively in Orizaba and Puebla, into a powerful colonial family with extensive investments in *obrajes*, most of their businesses were operated from Mexico City. Their interests embraced mines, trade, transport (they operated diligence services and were contractors for the first railway line to be built in the country) and banking (Antonio had dealings with French financiers and appears for have prioritised finance after the death

[102] G.P.C. Thomson *Puebla de los Ángeles: industry and society in a Mexican city, 1700-1850* (Boulder 1989) pp.57-8, 199, 203, 223-4, 236, 240-1, 243-4, 250, 263, 268, 296, 298; D. Keremitsis *La industrial textil mexicana en el siglo XIX* (Mexico 1973) p.128; L. Gamboa Ojeda *Los empresarios de ayer: el grupo dominante en la industria textil de Puebla, 1906-1929* (Mexico 1985) p.26-7.

of his brother), as well as textiles. Politically well connected, despite the occasional scrape, the brothers dealt with most of the regimes of the period, obtaining several government contracts. Their businesses prospered[103]. In the 1840s, Agustín García held seats on the boards of three textile companies: Compañía Industrial de Atlixco, the Compañía Industrial Manufacturera mill consortium, and the San Antonio Abad factory. García also had interests in banking. At the end of the century, he served on the government textile board, charged with establishing a regime of quotas and taxes for the industry[104.]

It is worth stressing a few of the characteristics common to the protagonists mentioned in the paragraphs immediately above. In addition to multiple investments in several stages of textile manufacture, all had interests in property and trade. Knowing the market and aware of the industrial transformation occurring in the North Atlantic economies, merchants were attuned to challenges and opportunities presented by the mechanisation of textile production in Mexico. Most of these individuals were also engaged in banking and finance, and enjoyed good political connexions. Yet, they were invisible entrepreneurs. Foreign and native observers were inclined to the view that Mexican capitalists were not dynamic businessmen: they lacked the spirit of association and entrepreneurship[105]. As hinted in the story of La Magdalena, the face of Mexican capitalism changed in the late nineteenth century. Two tendencies are observable: enterprises assumed a corporate image; foreigners became even more prominent[106]. In the manufacturing

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[103] D. Keremitsis *La industrial textil mexicana en el siglo XIX* (Mexico 1973) pp.61-3; L. Ludlow 'La formación del Banco Nacional de México: aspectos institucionales y sociales' in L. Ludlow & C. Marichal (eds.) *La banca en México* (Mexico 1998) pp.151,154, 161,170.
[104] D. Keremitsis *La industrial textil mexicana en el siglo XIX* (Mexico 1973) pp.137-8.
[105] E. Beatty *Institutions and Investment: the political basis of industrialization in Mexico before 1911* (Stanford 2001) p.37.
[106] C. Marichal 'Avances recientes en la historia de las grandes empresas y su importancia para la historia económica de México' in C. Marichal & M. Cerutti (eds.) Historia de las grandes empresas en México, 1850-1930 (Mexico 1997) pp.24-33; N. Maurer & S. Haber 'Institutional Change and Economic Growth: banks, financial markets and Mexican industrialization, 1878-1913' in J.L. Bortz & S. Haber (eds.) *The Mexican Economy, 1870-1911: essays on the economic history of institutions, revolution and growth* (Stanford

sector, these trends were particularly observed in textile production. French investors and French 'corporations' provided a strong impulse to the restructuring of the textile business. They were responsible for technical, organisational, and financial innovation. Plant was modernised and up-graded with the introduction of new machinery. Large-scale units became the norm, as enterprises were amalgamated and firms integrated backwards and forwards, from spinning to retailing. New management structures were brought in, and closer relations established with banks. The 'barcelonettes', a cluster of French immigrant entrepreneurs typified these processes[107]. In the textile sector, the consolidation of family networks was a pronounced feature of the emergence of large-scale operations[108].

The principal investment spurts in the Brazilian cotton textile sector occurred from the late 1860s to the mid 1870s, during the 1880s, between 1907 and 1913, in the 1920s, and after 1933[109]. Unlike their counterparts in Mexico, almost from the first, Brazilian mills combined all stages of manufacture, from spinning to finishing, thought the trend towards vertical integration (as well as horizontal) intensified further in the 1930s and 1940s,

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2002) pp.23-49; L. Gamboa Ojeda *Los empresarios de ayer: el grupo dominante en la industria textil de Puebla, 1906-1929* (Mexico 1985) pp.30-34; D. Keremitsis *La industrial textil mexicana en el siglo XIX* (Mexico 1973) pp.129-37. Marichal argues that the shift from family firm to impersonal corporation only took place in the textile sector towards the end of the nineteenth century, and was largely driven by the entry of French capital, as exemplified by the case of La Magdalena. For details of changes in the scale of operations, and the process of vertical and horizontal integration around 1900, see Gamboa Ojeda. She attributes concentration to the increasing integration of the national market, the growth of the railway system and banking network, the shift to electricity, tax reforms (abolition of excise duties and high external tariff), the depreciation of the silver peso.

[107] C. Marichal 'Avances recientes en la historia de las grandes empresas y su importancia para la historia económica de México' in C. Marichal & M. Cerutti (eds.) Historia de las grandes empresas en México, 1850-1930 (Mexico 1997) p.28.

[108] L. Gamboa Ojeda *Los empresarios de ayer: el grupo dominante en la industria textil de Puebla, 1906-1929* (Mexico 1985) pp.121-48.

[109] W.Suzigan *Indústria brasileira: origem e desenvolvimento* (São Paulo 1986) p.109; S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.23-5, 43-68, 95-9, 109-14, 152-3; W. Dean *The Industrialization of São Paulo, 1880-1945* (Austin 1969) pp.13, 57-8, 110-2. The periods are taken from Suzigan.

when the larger mills set up retail outlets[110.] For example, the first small industrial mill installed in the province of Minas Gerais in 1837 to manufacture cotton cloth operated 28 spindles and six looms; a later mill had 240 spindles and five looms[111]. The Mascarenhas family were the pioneers of *mineiro* industrial production. The clan dates back to Antônio Gonçalves da Silva Mascarenhas, a coppersmith who made and repaired sugar mill boilers. Having accumulated sufficient savings, he purchased a coffee *fazenda*, a mule train, and retail store. The *fazenda* marked the beginning of the family's engagement with textile. On the farm there were 12 handlooms, operated by slaves, turning out sacking and course fabric to bag coffee and clothe plantation workers. Industrial-scale cloth production started with two of the sons, Bernardo and Caetano. (There were thirteen children, nine boys and four girls.) Bernardo and Caetano first set up as merchants and then invested in a mill, the Fábrica do Cedro, founded in 1868. Soon after, the family inaugurated the Fábrica da Cachoeira. Some time later, the two mills were organised as a limited company, the Companhia Cedro e Cachoeira (CCC), one of the first joint-stock firms to be formed in the province. Other mills followed. By the 1880s, most of the second-generation brothers had become businessmen, with investments in land, trade, ironworks, and banking. In total, the family owned, or were part shareholders in, 10 textile factories. Registering the Companhia Cedro e Cachoeira as a joint-stock firms may have been a convenient method of drawing funds from a small circle of individuals related by blood and through marriage. Even in 1900, by which time the family held less than 50 percent of CCC shares, all the directors and managers were related to the original founders[112]. By the end of the nineteenth century,

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[110] S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.53, 162; W. Dean *The Industrialization of São Paulo, 1880-1945* (Austin 1969) p.113.

[111] W.Suzigan *Indústria brasileira: origem e desenvolvimento* (São Paulo 1986) pp.130-1.

[112] W.Suzigan *Indústria brasileira: origem e desenvolvimento* (São Paulo 1986) pp.132-3; S. de O. Birchal *Entrepreneurship in Nineteenth-century Brazil: the formation of a business environment* (London 1999) pp.41-2, 112-22.

family networks (or networks of families) had come to dominate the Minas textile business, and most other industries. The administrative structure of some of the largest textile firms shows that they were all invariably family affairs, even though organised as join stock companies[113].

The history of the Matarazzos in São Paulo echoes that of the Mascarenhas in Minas, save that the founder of the family fortune, Francisco, was an immigrant from Italy. Having arrived in Brazil in 1881, within a couple of decades Matarazzo had created the largest industrial complex in South America, and created another clan. There were twelve Matarazzo children, almost all of whom entered business and/or married into the planter elite. Using contacts in the local Italian community, and bringing his siblings to Brazil, Matarazzo stated out as a storekeeper but soon branched into lard-rendering and flour milling, and latter into cotton textile manufacture. Vertical integration was an early characteristic of the Matarazzo business empire. If the Matarazzos typify Dean's immigrant bourgeoisie, the Prados represent the planter bourgeoisie. The family had been at the forefront of every significant development of the plantation system in the province, including the introduction of free workers and the promotion of railways. For Dean, Antônio da Silva Prado exemplified the planter-entrepreneur, though he identifies family corporate initiatives only in railways, ports, meatpacking, and glass and shoe manufacture[114]. The family would later develop textile connexions.

Besides the industrial clans identified immediately above, other large textile groups emerged between the 1860s and the 1930s. The Fábrica Pau Grande, one of the largest early mills, was established at Petrópolis in the province of Rio de Janeiro in the 1870s. Set up as a private partnership, the *fábrica-fazenda* was founded by Francisco Pedro Lessa, Antônio Felício dos

[113] S. de O. Birchal *Entrepreneurship in Nineteenth-century Brazil: the formation of a business environment* (London 1999) p.124.
[114] S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.133, 135;W. Dean *The Industrialization of São Paulo, 1880-1945* (Austin 1969) pp.30-1, 45, 49-66.

Santos, and John Sherrington. Dos Santos, a medical doctor, was descended from a politically prominent *mineiro* family with interests in textile manufacture and trade. A parliamentarian, he became a prominent advocate of government support for industry. Lessa, also from Minas Gerais, was a merchant, but soon sold his share in the enterprise to one José Rodrigues Peixoto. Sherrington, who was English, appears to have been responsible for equipping the factory, and served as the first manager. Rodrigues Peixoto was also a medic. He hailed from the city of Rio de Janeiro and seems to have been a business associate of dos Santos. Originally, the company wove cloth with imported yarn. In the 1880s the legal status of Pau Grande was changed from a private partnership to a limited company. The capital base was expanded as additional shareholders were brought it. Most of the new shareholders had investments in several branches of manufacturing, notably textiles. Some were import-export merchants, others were in coffee and banking. At the beginning of the 1880s, the company started spinning its own thread. Operations expanded considerably during the decade and, in the 1890s, the company began to absorb other mills. Some of these were enterprises owned by existing Pau Grande shareholders, so there may have been an element of rationalisation as much as growth through amalgamation. However, acquisitions meant that Pau Grande shed both the character of a private partnership and '*fábrica-fazenda*'. The multi-plant business operated large, modern factories in the city of Rio de Janeiro as well as the interior of the province/state. The process of expansion - through new build and acquisition - continued in the immediate pre-First World War years and the 1920s[115].

The Fábrica Beribery (or Biribiry) was a less successful venture, but illustrates the family nature of many early enterprises, and the web of contacts

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[115] S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.42; W.Suzigan *Indústria brasileira: origem e desenvolvimento* (São Paulo 1986) pp.134, 136, 2-3; E. Von der Weid & A.M. Rodrigues Bastos *O fio da meada: estratégia de expansão de uma indústria têxtil: Companhia América Fabril, 1878-1930* (Rio de Janeiro 1986) pp.31-64.

being developed among textile entrepreneurs. The mill was founded in Minas Gerais in 1876 by the bishop of Diamantina, João Antônio dos Santos, in association with his brothers, Antônio Felício and Joaquim Felício, nephews, and other associates. (Antônio Felício dos Santos was the founder partner of the Pau Grande mill cited above.) The Beribery mill seems to have been run as a private, family business throughout. Yet the dos Santos brothers were engaged in other activities, not only textiles, that adopted a more formal, corporate status in the 1880s[116].

Pau Grande and Beribery were far from unique. Suzigan identifies the emergence of several business clusters that conform fairly neatly with the general categorisations established above, namely mills founded by merchants, planters and immigrants - and various permutations thereof. He also details similar processes of rationalisation and horizontal and vertical amalgamation, particularly in the 1880s and 1920s. While there is no sharply defined pattern, the first mills, mainly established in the northeast, were founded by individual merchants or trading houses. Practically all early mill owners in Bahia were merchant-manufacturers, most were Portuguese. At late as 1866, Bahia contained 59 percent of the total number of cotton mills in Brazil, 57 percent of looms and almost 73 percent of the workforce. (The differentials suggest that mills located in other parts of the Empire were larger and more capital intensive than *bahiano* firms.) In the province of Minas Gerais, landowners dominated the early group of textile barons, though *fazendeiros* were not necessarily raising commodities for export. Foreigners were also active in the sector, hinting at the mercantile origin of some mills. Although sugar *fazendeiros* were among the first investors in mills in the city and province of Rio de Janeiro, foreign merchants were by far the largest group,

[116] S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) p.42; E. Von der Weid & A.M. Rodrigues Bastos *O fio da meada: estratégia de expansão de uma indústria têxtil: Companhia América Fabril, 1878-1930* (Rio de Janeiro 1986) pp.31-64; S. de O. Birchal *Entrepreneurship in Nineteenth-century Brazil: the formation of a business environment* (London 1999) pp.29.

with Portuguese and British houses unsurprisingly prominent. Indeed, one of first mills was established by the Hargreaves brothers, sons of a cloth importer. (Historians speculate whether they were related to the inventor of the spinning jenny.) Until the beginning of the twentieth century, the *carioca* textile industry was dominated by an elite group of merchant houses, operating mills as partnerships of firms/trading houses rather than of individuals. To date, historians have found no evidence of coffee landowner participation in the Rio de Janeiro industry. Modern cotton textile production in the province of São Paulo took off in the late 1860s - the moment of transition from the 'cotton boom' to the 'coffee boom'. Suzigan argues forcefully that from the 1860s to the 1880s, coffee planters were the investors in, and operators of, *paulista* mills, immigrants and merchants only appeared later. It is not clear whether changes in the scale and organisation of the cotton industry at this point was driven by the appearance of new entrepreneurs or a 'natural' function of growth and consolidation. By the early twentieth century, some of the largest mills in the country had been established in São Paulo, most owned by immigrant families, or networks of families[117].

The stylised family and firm entrepreneurial histories offered above highlight similarities and contrasts with Mexico. Merchants were instrumental in the emergence of modern textile manufacture in both countries. As stated, this is unsurprising given that traders had a knowledge of the market and access to new, overseas technology. In the first instance the prospects of merchant-manufacturers looked more promising in Mexico. Markets there were physically larger and more geographically concentrated than elsewhere in Latin America. All these advantages did not survive the struggle for Independence - and the extended period of political post-Independence instability, which was much more destructive in Mexico than in many other

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[117] W.Suzigan *Indústria brasileira: origem e desenvolvimento* (São Paulo 1986) pp.126-56. See also S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.41-56, 107-22.

parts of Latin America. In different regions of Brazil, export boom initially consolidated the position of merchant-manufacturers - at least in the principal ports, if not in the interior. Subsequently, the export economy and slow marketisation created opportunities in manufacturing for native proto-capitalists and immigrant penny capitalists. The modern export boom occurred later in Mexico and, while it fostered economic recovery and growth, may have offered more attractive alternatives to manufacturing for national entrepreneurs. The fate of interior manufacture in the Argentine underscores processes that may also have been at work in Mexico, and so warrants a lengthy digression.

An inland province, enjoying favourable communications with neighbouring regions during the colonial period, woollen manufacture in Cordoba survived the ‘Crisis of Independence’ and protracted conflict in the River Plate. It remained a key centre for production and distribution. There were about 1,000 female weavers in city *obrajes* by 1813, and more than 19,000 domestic workers in the countryside who operated under a putting out system. The most striking feature of the Cordoba economy during the first third of the nineteenth century was the growth trajectory of woollen textile production. Although there are no consistent time series, there is evidence that Cordoba woollen ponchos continued to find a ready market until almost the middle of the century. Despite some loss of market share to European textiles, Buenos Aries consumption of fine Cordoba cloth was still running at between 40,000 and 80,000 pieces in the early and late 1830s respectively. There were, however, changes in the composition of *cordobes* cloth sales to the littoral. Initially, ponchos accounted for some 85 percent of woollens ‘exported’ to Buenos Aires: by the 1840s, coarse fabric predominated. There was an even more pronounced shift from cloth to raw wool. From the mid-1830s to 1850, the volume of *cordobes* wool exports through Buenos Aires increased by about 50 percent. Why did Cordoba landowners switch from supplying the local industry to producing for export? There are several explanations, but the most telling is changes in relative prices. By the 1840s, an arroba of washed *cordobes* wool and an arroba of finished ponchos fetched the same price in the city of Buenos Aires. This implies that there was much more profit to be made from raw wool exports than from woollen textile manufacture – even for artisans who raised their own wool for weaving into cloth[118]. There is no equivalent data on relative prices for Mexico during the period, but there is little reason to suggest that similar processes were not at work, favouring investment in export commodities rather than manufacture. This may explain why local finance tended to be displaced by immigrant (and foreign corporate) capital in Mexico around the 1890s, precisely the period when mills in Brazil were moving from a family/personal model of industrial capitalism to a more corporate form of organisation.

Perhaps these trends and differences also suggest that there was a larger cadre of industrial entrepreneurs in Brazil, whether emerging from the planter or the mercantile bourgeoisie - and whether from the export or non-export sectors. Mexican merchant-manufacturers were opportunistically entrepreneurial not consistently entrepreneurial. When possible, certainly until the 1850s, they sought to recreate the *status quo ante*, rather than adapt to a new market reality. They exhibited a strong preference for risk limitation rather than risk-taking, deploying political influence to protect rents.

All the cases explored above show the importance of political connexions. Many of the pioneering and follower mills were established by entrepreneurs with 'political cover'. This does not mean that the industrial entrepreneuriat was politically dominant, rather that its members were politically well connected. As states in Latin America became more

[118] C.S. Assadourian *El sistema de la economía colonial: el mercado interior, regiones y espacio economico* (Mexico 1983) pp.35, 108, 342-3,350-5, 361; C.S. Assadourian & S. Palomeque 'Las relaciones mercantiles de Cordoba, 1800-1830' in M.A. Irigoin & R. Schmit (eds.) *La desintegración de la economí colonial en el interior del espacio rioplatense, 1820-1860* (Buenos Aires, 2003) pp.151-226; M.A. Rosal `Flujos comerciales e integración economica del espacio rioplatense hacia el final del periodo rosista' in M.A. Irigoin & R. Schmit (eds.) *La desintegración de la economía colonial en el interior del espacio rioplatense, 1820-1860* (Buenos Aires, 2003) pp.229-31.

‘institutional’ towards to end of the nineteenth century, so too did producer groups. Manufacturers, no less that other interests, formed clubs and associations. These groups inter-acted with government and generally sought to make the case for domestic industry, notwithstanding the preponderance of commodity production for export. Topik has agonised over the economic role of the ‘liberal’ state during the period of export-led growth. With regard to Brazil and Mexico, and notwithstanding differences in the scale of expenditure and degree of commitment liberal tenets, his research shows enabling action by government in areas such as public works, and (possibly) an active stance in policy areas like tariffs and credit[119]. Others have pushed this approach further, exploring how administrative action became increasingly responsive to (some) demands emanating from manufacturing interests, particularly when effected by organised lobbies after the 1890s[120].

The nature and evolution of the textile entrepreneuriat under-scores the importance of family networks, even when businesses assumed a more formal or institutional appearance during and after the 1880s, as companies opted for limited liability. Joint stock enterprises may have appeared ‘modern’, and the device gave companies access to embryonic capital markets, but businesses were still run largely as family firms. In this respect, the experience of cotton textiles is little different from that of other areas of business. New research on the success and increasing institutionality of family/social networks (*grupos*) in

[119] S. Topik ‘The Economic Role of the State in Liberal Regimes: Brazil and Mexico compared, 1888-1910' in J.L. Love & N. Jacobsen (eds.) *Guiding the Invisible Hand: economic liberalism and the state in Latin American history* (New York 1988) pp.117-44. In this early essay, Topik identifies areas of state action, though is reluctant to conclude that the growing scope of state activities diverged too far from the principles of economic liberalism, p.138.

[120] S. Haber ‘Industrial Concentration and Capital Markets: a comparative study of Brazil, Mexico and the United States, 1830-1930' *Journal of Economic History* LI 3 (1991) 559-580;W.R. Summerhill ‘Transport Improvement and Economic Growth in Brazil and Mexico’ in S. Haber (ed.) *How Latin America Fell Behind: essays on the economic histories of Brazil and Mexico, 1800-1914* (Stanford 1997);E. Beatty *Institutions and Investment: the political basis of industrialization in Mexico before 1911* (Stanford 2001) pp.70-74, 196-7; W.R. Summerhill Order Against Progress: government, foreign investment and railroads in Brazil, 1854-1913 (Stanford 2003) pp.34-57; R. Weiner *Race, Nation and Market: economic culture in Porfirian Mexico* (Tuscon 2004) pp.30-1, 58-9.

Latin American business challenges Chandlerian assumptions of the inevitable (or linear) ascent of corporate enterprise. Because the history of business in the continent is quite different from the USA: ' ... the Chandlarian model has little relation with the reality of the firm in underdeveloped countries...'[121]. Across the continent, as in other 'late-developing economies', *grupos* were a key instrument in the consolidation of business. In politically and economically fragile countries, or when commercial and financial links were tenuous, trust and knowledge were highly valued commodities. Trust had a particular economic function for businesses networks based on social groupings like an individual extended family, alliances of families bound by marriage, or ethnic Diaspora[122]. Perhaps this explains why family cluster firms appear to have had a large presence and extended life in Latin America. Once established, these networks proved to be remarkably flexible and resilient - not least in capturing (and, perhaps, knowing when to surrender) rents. However, it is important to distinguish between (largely) single-family businesses, especially prominent among early textile mills, and the multi-family clusters which had emerged after the 1880s. What differentiates *grupos* from the conventional family firm, and what gives them greater scope, is the fact that owner-managers were – and are - drawn from several families. G*rupos* tended - and tend - to be multi-company entities, transacting in different markets under common entrepreneurial and financial control. Although the *grupo* constitutes a form of business organisation different from that encountered among large enterprises in advanced industrial economies, the multi-family business cluster is more formally constituted than the conventional family firm and, perhaps for this reason, better able to manage the transition from one generation to another, avoiding the (now much questioned)

[121] María Inés Barbero 'Business History in Latin America: issues and debates' in Franco Amatori & Geoffrey Jones (eds.) *Business History around the World* (Cambridge: CUP 2003) pp.329-30.
[122] Mark Casson & Howard Cox 'International Business Networks: theory and history' *Business and Economic History* XXII 1 (1993) p.43.

Buddenbrooks syndrome of a weakening of entrepreneurial drive across the generations in family-run business[123]. *Grupos* manifest the ability to evolve into large-scale, structured business bureaucracies - this was certainly the case with the Mascarenhas and Matarazzo in Brazil, and with other firms examined above.

Perhaps the adaptability and flexibility of *grupo*-type networks of families accounts for the enduring predominance of national (or immigrant/settler) entrepreneurship in the sector. By the early twentieth century, it is generally accepted that 'domestic' capital dominated textile production throughout Latin America. There were, or course, some exceptions: Coats, for example, had several operations in South America. Nevertheless, by the 1920s and 1930s, the cotton textile entrepreneuriat had become essentially national, notwithstanding the immigrant patina cultivated by some individuals. While the barcelonettes may have retained close links with France, and entrepreneurs in the classic mould like Matarazzo stressed their Italian roots (and were ennobled by the Italian government), their businesses were to all intents domestic. In many countries, aspiring immigrant talent had already been absorbed into the 'planter oligarchies', which had themselves been transformed by export-led growth. Even as transnational capital was assuming a key role in other branches of manufacturing, cotton textiles became patriotically *industria/indústria nacional*. Commenting on the migration of US manufacturing to South America during the inter-war period, Phelps identifies four categories of firms likely to locate there: those engaged in the extraction and processing of minerals; those processing arable and pastoral products; public service providers; and 'general manufacturing'[124]. Among the 'general' category, various sub-sectors are listed and, occasionally for purposes of illustration, individual companies identified. It is instructive

[123] Nathaniel H. Leff 'Industrial Organisation and Entrepreneurship in the Developing Countries: the Economic Groups' *Economic Development and Cultural Change* XXVI 4 (1978) p.663.

[124] D.M. Phelps *Migration of Industry to South America* (New York 1936) pp.2-3.

that US cotton textile firms are conspicuous by their absence, though the Singer Sewing Machine Company had outlets in the Argentine and Chile. On the other hand, US pharmaceutical corporations, and vehicle and equipment firms like Ford, General Motors, National Cash Register and International Harvester were manufacturing or assembling across the continent. Indeed, sectors such as motor vehicles and pharmaceuticals, along with meatpacking and construction, accounted for the largest concentrations of US companies in 1933[125]. This 'gap' in the US corporate presence in Latin America would suggest that domestic entrepreneuriats had created a secure niche. While foreign businesses that had previously supplied consumer durables to Latin America re-located there when markets reached a critical size, or when tariffs threatened to exclude imports, by-and-large, overseas textile manufacturers did not. Local cotton manufacturers had secured an unassailable position in the home market by the 1920s.

iii) Capital and Credit Markets

Further constructions can be placed upon the family and firm case histories, and the discussion of *grupos*, recounted in the previous sub-section. If early textile entrepreneurs across the continent bemoaned a lack of labour, they were similarly vociferous about capital scarcity126. Indeed, this is one of the most compelling elements of the Dean thesis, merchants and planters were more likely to have access to funds - and foreign exchange to import equipment and inputs - than other agents.

Stein and Suzigan detail the flow of merchant and planter capital into textiles, and stress the overwhelming preponderance of family network finance in Brazil from the 1840s until at least the 1880s[127]. In Bahia, practically all the

[125] D.M. Phelps *Migration of Industry to South America* (New York 1936) pp.3-16, 325, 327.
[126] E. Cobos *La industria algodonera en Iberoamérica* (Madrid 1953) pp.129; S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.24; D. Keremitsis *La industrial textil mexicana en el siglo XIX* (Mexico 1973) p.59.
[127] S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro

capital came from trade, a notable investment surge occurring with the effective end of the trans-Atlantic slave trade in the early 1850s: funds formerly tied up in the slave trade moved into textile manufacture[128]. It is possible that the end of slave imports also 'liberated' capital for investment in manufacturing and more diverse activities in the city and state of Rio de Janeiro. As stated above, although capital was provided by sugar mill entrepreneurs, the bulk of the funds came from trading houses. By mid-century, the city was well established as the main port of the Empire, and the principal source of finance[129.] To reiterate, Dean asserts that starter industrial capital in São Paulo was provided by traders and immigrants[130]. Yet Suzigan demonstrates - and provides the evidence - that coffee capital financed *paulista* mills, alongside merchant and immigrant investment.[131] In Mexico, merchant-manufacturers constituted a new source of funds for the textile sector before the 1840s[132]. In addition, and exceptionally in Latin America for the period, would-be Mexican industrialists had access to the state 'development bank, the Banco de Avío. Nevertheless, the greater part of funds were provided by the merchant-mining-financier 'pole', notably in the dynamic north[133]. While data on profits is sporadic, most authors assume that once mills had entered regular production, expansion was based on ploughed back profits. As Birchal records, ' ... the main sources of capital for the *mineiro* textile industry ... were trade, ranching and agriculture, and the diamond business. Towards the end of the century several textile mills were

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1979) pp.43-8; W.Suzigan *Indústria brasileira: origem e desenvolvimento* (São Paulo 1986) pp.129-30, 132-3, 135-7, 138-9.

128 W.Suzigan *Indústria brasileira: origem e desenvolvimento* (São Paulo 1986) pp.129-30.

129 W.Suzigan *Indústria brasileira: origem e desenvolvimento* (São Paulo 1986) pp.135-7.

130 W. Dean *The Industrialization of São Paulo, 1880-1945* (Austin 1969) pp.49-66.

131 W.Suzigan *Indústria brasileira: origem e desenvolvimento* (São Paulo 1986) p.138.

132 F. Rosenzweig 'El desarrollo económico de México de 1877 a 1911' in E. Cárdenas (ed.) *Historia económica de México* (Mexico 1992) p.69; G.P.C. Thomson *Puebla de los Ángeles: industry and society in a Mexican city, 1700-1850* (Boulder 1989) pp.49, 262-79.

133 C. Marichal 'Avances recientes en la historia de las grandes empresas y su importancia para la historia económica de México' in C. Marichal & M. Cerutti (eds.) *Historia de las grandes empresas en México, 1850-1930* (Mexico 1997) p.28.

financed by capital accumulated in the industry itself.'[134]. This is corroborated by the tendency amongst cotton industrialists in Minas and elsewhere to set up (or invest in) new mills once an early venture had become successful. Arguably, this trait represented a diffusion of entrepreneurship as much as capital. Acknowledging a lack of precise evidence, Suzigan observes that plough-back profits must had been a significant source of funding the wave of investment in cotton textile manufacture that took place around 1885-95, a period of growth characterised not so much by the number of new mills established (as had occurred during previous rounds of expansion) but by the size of the new factories[135].

After the 1880s, funding sources became more impersonal - at least formally. While causality cannot always be attributed with precision, as stated above, two inter-related trends can be observed: vertical and horizontal integration leading to concentration and an increase in the scale of production. In Mexico, Keremitsis and others relate these trends to a growing French presence - both 'settler capital' and corporate investment[136]. Institutionalisation of textile industry funding assumed two forms. First, as indicated, companies assumed limited liability. Secondly, banks became more actively involved in credit provision. In effect, many family firms were registered as joint stock companies, and holding companies formed to manage the affairs of the *grupo*. Scrip was exchanged, schedules of profit distributions established, and inter-locking directorships created. And,

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[134] S. de O. Birchal *Entrepreneurship in Nineteenth-century Brazil: the formation of a business environment* (London 1999) p.66.
[135] W.Suzigan *Indústria brasileira: origem e desenvolvimento* (São Paulo 1986) pp.139-45.
[136] D. Keremitsis *La industrial textil mexicana en el siglo XIX* (Mexico 1973) pp.129-75; M. Trujillo Bolio 'La fábrica La Magdalena Contreras, 1836-1910: una empresa textil precursora en el valle de México' in C. Marichal & M. Cerutti (eds.) *Historia de las grandes empresas en México, 1850-1930* (Mexico 1997) pp.266-70; C. Marichal 'Avances recientes en la historia de las grandes empresas y su importancia para la historia económica de México' in C. Marichal & M. Cerutti (eds.) Historia de las grandes empresas en México, 1850-1930 (Mexico 1997) pp.27-8; L. Gamboa Ojeda *Los empresarios de ayer: el grupo dominante en la industria textil de Puebla, 1906-1929* (Mexico 1985) pp.159-80, 201-57. Gamboa Ojeda indicates that Spanish immigrants and capital were more influential than French in Puebla.

divisions between bank and industry blurred - most of the *grupos* combined the spheres of manufacture and finance. The nature of the transition to impersonal methods of funding are epitomised by the 'barcelonettes', textile enterprises established by French immigrants in the state of Veracruz. These firms defy simple classification. Were they a cluster of enterprises or a network of families? Probably they were both. Originally a number of small, independent businesses, the barcelonettes shared technology, and business and market knowledge. They were also a financial network, developing increasingly formal credit links amongst themselves and with banks[137.] In the broader economy, these developments may have been influenced by the growing importance of banks which, in turn, was a function of larger institutional reforms detailed above. Designed to foster the development of a capital market, regulations governing joint stock companies were changed in 1888, making it easy for firms to acquire debt and for shareholders to obtain limited liability[138]. Changes in credit and banking legislation in the 1880s coincided with the re-establishment of diplomatic relations with Britain and France. French banks, in particular, became very active in Mexico with the renewal of relations, as did French private investors targeting the textile sector.

Case histories of textile businesses in Brazil recounted above also show an increase in scale, and a trend towards concentration and integration. As in Mexico, these tendencies were associated with stronger access to institutional credit. In Brazil, concentration signalled not only a change in the size of individual firms, it also spelt the geographical centralisation of textile production in São Paulo and Rio de Janeiro, as larger, more capital intensive firms tended to cluster there. Concentration occurred in three periods: the phase of rapid

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[137] C. Marichal 'Avances recientes en la historia de las grandes empresas y su importancia para la historia económica de México' in C. Marichal & M. Cerutti (eds.) Historia de las grandes empresas en México, 1850-1930 (Mexico 1997) p.28.

[138] L. Ludlow & C. Marichal 'Introducción' in L. Ludlow & C. Marichal (eds.) *La banca en México* (Mexico 1998) pp.21-6; E. Beatty *Institutions and Investment: the political basis of industrialization in Mexico before 1911* (Stanford 2001) pp.37-8. Beatty is sceptical about the impact of institutional change, noting credit and investment growth before the completion of reforms.

monetary expansion (*Encilhamento*) of the early 1890s; the immediate pre-First World War boom; and the mid-1920s - a period of cartelisation driven by 'dumping'[139.] The new funding regime is neatly captured by the Fábrica Votorantim founded in São Paulo in 1892. Initially intended only as a dying and printing business, within a few years the Votorantim was producing is own yard and weaving its own cloth. When opened, the company was one of the largest, most up-to-date manufacturing complexes in the state, and would later be a pioneer of rayon production in Brazil. A telling feature of the new enterprise was that it was set up by a bank - albeit a bank controlled by coffee *fazendeiros* - rather than as a family business or private partnership[140]. Banks, and the money market generally, were becoming the principal means of funding new ventures - and sustaining the expansion of established firms[141].

Haber attributes the surge in institutional funding of business in Brazil to looser banking regulations implemented with the fall of the Empire and the establishment of the Republic in 1889 - events responsible for the inflation of the *Enchilhamento*. Others point to innovations in the law relating to limited liability, and looser monetary policy, in the mid-1880s. The monetary and financial system was already becoming more flexible before 1889[142]. There

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[139] S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.109-114, 121-38; W. Suzigan *Indústria brasileira: origem e desenvolvimento* (São Paulo 1986) pp.138-56.

[140] W. Dean *The Industrialization of São Paulo, 1880-1945* (Austin 1969) pp.104, 111, 113, 119; W.Suzigan *Indústria brasileira: origem e desenvolvimento* (São Paulo 1986) pp.141.

[141] S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.44, 49-56, 99-105, 115-22; W.Suzigan *Indústria brasileira: origen e desenvolvimento* (São Paulo 1986) pp.129-56.

[142] S. Haber 'Industrial Concentration and Capital Markets: a comparative study of Brazil, Mexico and the United States, 1830-1930' *Journal of Economic History* LI 3 (1991) 559-580; Z.M. Cardoso del Mello *Matamorfoses da riqueza: São Paulo, 1845-1895* (São Paulo 1990) pp.131-47; S. Topik T*he Political Economy of the Brazilian State, 1889-1930* (Austin 1987) pp.27-57; A. Hanley 'Business Finance and the São Paulo Bolsa, 1886-1917 in J.H. Coatsworth & A.M. Taylor (eds.) *Latin America and the World Economy since 1800* (Cambridge, Mass. 1998) pp.115-38; G.D. Triner 'Banking and Money Markets in Brazil, 1889-1930' in J.H. Coatsworth & A.M. Taylor (eds.) *Latin America and the World Economy since 1800* (Cambridge, Mass. 1998) pp.223-46. Hanley provides convincing evidence that, in São Paulo, limited companies with a good track record experienced little difficulty raising money in the local market, while Cardoso de Mello catalogues the increasing popularity of

was a modest proliferation of new privates banks in Brazil in the 1880s, complementing the semi-official Banco do Brasil and limited number of domestic credit institutions and foreign banks already in operation. It would be incorrect to argue that national money markets emerged in Brazil and Mexico after the 1890s, though something approaching an embryonic national credit system was in formation in the Argentine and, possibly, Chile. But access to formal credit was becoming easier, particularly in Brazil. Before the turn of the century, there were small, layered money markets in Rio de Janeiro and São Paulo. Institutional credit was certainly available to favoured enterprises. Hanley shows how, after the mid-1880s, the São Paulo market provided accommodation to a growing number of businesses. Initially, railways and public utilities accounted for an overwhelming proportion of share transactions. However, from c.1900, textile companies accounted for one of the fastest growth area in stock exchange share dealings. In addition, as a sector, textile firms became one of the most aggressive issues of corporate debt - and bonds were becoming an increasingly important form of finance for individual mills[143]. For Haber, relaxation in banking legislation, easy access to joint stock registration, and the growth in institutional credit accounts for the better performance of the textile sector in Brazil, compared with Mexico, from the turn of the century onwards. Brazilian mills were larger and more productive because the credit market was more competitive and because enterprises had easier access to it. In Mexico, there was less competition and less transparency - crony capitalism was the rule[144]. Be that as it may,

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share ownership among the *paulista* elite between the mid 1880s and the mid 1890s.

[143] A. Hanley 'Business Finance and the São Paulo Bolsa, 1886-1917 in J.H. Coatsworth & A.M. Taylor (eds.) *Latin America and the World Economy since 1800* (Cambridge, Mass. 1998) pp.124-30.

[144] S. Haber 'Industrial Concentration and Capital Markets: a comparative study of Brazil, Mexico and the United States, 1830-1930' *Journal of Economic History* LI 3 (1991) 559-580; N. Maurer & S. Haber 'Institutional Change and Economic Growth: banks, financial markets and Mexican industrialization, 1878-1913' in J.L. Bortz & S. Haber (eds.) *The Mexican Economy, 1870-1911: essays on the economic history of institutions, revolution and growth* (Stanford 2002) pp.23-49.

students of Latin American industrial history concur that firms associated with banks were much more likely to succeed - and survive - than enterprises that lacking formal connexions with the local capital market, no matter how small and imperfect that market might be[145].

Sources of funding for the textile sector diversified and grew over the period - and became much more formal by the turn of the century. Changes in the organisation of the firm - the shift from family enterprise, to joint-stock company, to 'conglomerate' - was associated with the substitution of impersonal for familial circuits of credit. The nature of causality is not always clear. Did technical change - and competition - drive recourse to formal lines of credit? Did the emergence of local capital markets facilitate changes in the scale and scope of businesses? (And, there is the enduring debate about the *grupos*: they looked like impersonal/managerial bureaucracies, but they were often run as a family firm.) Textile mills were not the only businesses seeking access to bank and money market funding in this period, but they were the prime consumers, and recipients, of commercial credit after c.1890. Whatever the direction of causality, the outcome was clear: in Mexico and Brazil, the proliferation of sources of institutional credit was associated with horizontal and vertical integration among textile firms. But there were differences. In Mexico, greater corporate institutionality and impersonal credit was apparently accompanied by foreign (or immigrant/settler) control. This was not so in Brazil where, especially following down turns in the economic cycle, lines of bank finance facilitated greater domestic ownership - local capital displaced foreign.

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[145] D. Guy 'Dependency, the Credit Market and Argentine Industrialization, 1860-1940' Business History Review LVIII 3 (1984) 546-9; W. Suzigan *Indústria brasileira: origem e desenvolvimento* (São Paulo 1986) pp.138-56; D. Keremitsis *La industrial textil mexicana en el siglo XIX* (Mexico 1973) pp.154-6; N. Maurer & S. Haber 'Institutional Change and Economic Growth: banks, financial markets and Mexican industrialization, 1878-1913' in J.L. Bortz & S. Haber (eds.) *The Mexican Economy, 1870-1911: essays on the economic history of institutions, revolution and growth* (Stanford 2002) p.46.

iv) Raw Material

How important was local production of raw cotton for the location and growth of the modern cotton textile industry in Latin America, given that the plant is indigenous? There is no easy answer to this question, though contemporary opinion in the early national period often ascribed great significance to the capacity to grow cotton.

As shown above, the recovery of cotton textile production in Puebla was attributed to location. An important factor explaining recovery was the location of the city on the two main trade route from the coast, where cotton was grown, and the centre of the Viceroyalty. This, and the availability of an impoverished workforce composed almost exclusively of widows and young girls, gave the city a significant comparative advantage. It was proximity of raw material supply, and a tradition of cottage weaving that persuaded early cotton industrialists in Puebla in the 1820s and 1830s to specialise in the mechanical production of thread rather than cloth[146]. A century later, at the other end of the continent, similar assumptions about the significance of raw material supply as a driver of industrialisation could be encountered. By the 1920s, the Argentine was the most industrial economy in Latin America, but could not match Brazil or Mexico in terms of cotton textile production. That locally gown cotton was available made the paradox a conundrum[147]. Hence, around 1900 there were official efforts to re-invigorate cotton growing - production had declined dramatically after the end of the US Civil War[148].

Throughout the nineteenth century, observations about the growth of cotton textile manufacture were invariably accompanied by references to the importance of raw cotton supplies. Although benefiting from a captive market and access to merchant capital, most contemporary accounts attach equal

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[146] G.P.C. Thomson *Puebla de los Ángeles: industry and society in a Mexican city, 1700-1850* (Boulder 1989) pp.38-42.
[147] J.C. Korol & J.C. Korol 'Incomplete Industrialisation:and Argentine obsession' Latin American Research review XXV 1 (1990) 7-30.
[148] The Times *The Times Book on Argentina* (London 1927) p.218.

emphasis to raw material supply as explaining the location of the first modern cotton mills in Brazil in Bahia[149.] A similar argument is advanced to explain the remarkable early expansion of textile mills in Minas Gerais[150]. Cheap raw material availability was held responsible for the surge in cotton textile manufacture in São Paulo in the very late 1860s and 1870s, though in a paradoxical form. Just as raw cotton growing had taken off in the Argentine during the US Civil War, cotton planting occurred in São Paulo in the same period. The crop was not indigenous to the province, but Liverpool merchants and Manchester manufacturers underwrote the distribution of seeds there, as they did in other suitable growing regions. *Fazendeiros* in the 'decadent' sugar zone of São Paulo rapidly switch to cotton, which required much less capital than sugar. However, when cotton exports from the USA recovered at the end the decade, and international prices plummeted from wartime heights, *paulista* producers lost ground in the international market. Exports of raw cotton from Brazil increased by a factor of five between 1862 and 1872: the crop year 1871/2 represented the export peak for the whole of the nineteenth century. Exports almost halved in 1872/3, and halved again in 1875/6. (Raw cotton exports did not revive until the 1930s, when cultivation and overseas sales was supported with the formation of a government commodity board and semi-batter trading agreements with US dollar scarce importing countries.)[151]. This scenario contributed to local manufacture in two ways: cotton *fazendeiros* forward integrated into manufacture in order to find an outlet for the commodity, while other would-be mill owners benefited from a cheap input[152]. The boom - in local raw cotton production - and bust in - in

[149] S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) p.35; W.Suzigan *Indústria brasileira: origen e desenvolvimento* (São Paulo 1986) p.127.
[150] W.Suzigan *Indústria brasileira: origen e desenvolvimento* (São Paulo 1986) p.131.
[151] S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.144-66, 196.
[152] S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.57-9; C.M. Lewis 'Railways and Industrialisation: Argentina and brazil, 1870-1929'

world prices - similarly contributed to recovery, and changes in the scale, of cotton growing in Peru, thereby facilitating the industrialisation of cloth production towards the end of the nineteenth century[153]. This was a reversal of the process that had occurred a generation earlier in the case of Córdoba wool: value adding spinning and weaving of local fibre into home-produced cloth was now more profitable than commodity export.

Nevertheless, an indigenous supply of raw cotton was a mixed blessing for manufacturers. As the US Civil War showed, external events had an impact on relative prices. Just as small 'integrated' woollen textile producers of Córdoba, who raised their own wool to weave into cloth, responded to changing price differentials by shifting from textile manufacture to raw wool export, so mills might find raw cotton supplies diverted from the home market to exports in response to price changes. Complaints by mills about erratic cotton supplies were not infrequent[154.] Shifting price differentials functioned in both directions, but cotton spinners and weavers tended to moan only when world prices rose and domestic raw cotton supplies were diverted overseas, not when international prices fell. Quality was also an issue. Indigenous fibres were short staple and could not compare in length and ease of working with Sea Island Cotton. Spinners and weavers in Mexico were far from equivocal about prohibitions of raw cotton imports, even when clamouring for protection for their own product. With the development of a national rail network, many mills found it cheaper, and generally more advantageous, to import raw cotton from the USA, rather than use the local product. Local raw

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in C. Abel & C.M. Lewis (eds.) *Latin America: economic imperialism and the state* (London 1985) pp.214-5.

[153] B. Albert 'External Forces and the Transformation of Peruvian Coastal Agriculture, 1880-1930' in C. Abel & C.M. Lewis (eds.) *Latin America: economic imperialism and the state* (London 1985) pp.236, 239-40.

[154] S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) p.59; G.P.C. Thomson 'Protectionism and Industrialization in Mexico, 1821-1854: the case of Puebla' in C. Abel & C.M. Lewis (eds.) *Latin America: economic imperialism and the state* (London 1985) p.141.

cotton often failed to beat imports on price, cleanliness, and general quality[155]. Mexican mills may have been importing up to three-quarters of their cotton in the 1880s and 1890s, and were still purchasing over half their supplies overseas at the beginning of the twentieth century[156]. The story in Brazil is similar, with complaints about quality and erratic supply[157]. Official efforts to promote raw cotton growing in the Argentine had yielded some success before the First World War, and the war gave a substantial impetus to new planting. The area under cultivation quadrupled between 1914 and 1918, and continued to expand during the 1920s. Fibre production rose, as did exports. Indeed, by the mid-1920s, well over half the crop was being exported - in 1924/25 virtually three-quarters. This resulted in another paradox: in 1922/3, although 3,500 tonnes of a total crop of 5,600 tonnes were exported, Argentinian mills imported almost 9,000 tonnes - again suggesting that imports had a considerable quality or price advantage[158].

Clearly, domestic raw cotton availability could be problematic, and was seen as such by some manufacturers at the end of the nineteenth century. It could be a positive disadvantage if an inferior local commodity was accorded tariff protection. Thus, the International Labour Office was able to state: ‘Textile mills in countries which produce within their own borders or in their colonies all or a large part of their raw cotton ... possess few advantages, if any, over textile mills in countries which have to import most or all of the raw

[155] G.P.C. Thomson ‘Protectionism and Industrialization in Mexico, 1821-1854: the case of Puebla’ in C. Abel & C.M. Lewis (eds.) *Latin America: economic imperialism and the state* (London 1985) p.141, and ‘Traditional and Modern Manufacturing in mexico, 1821-1850' in R. Liehr (ed.) América Latina en la época de Simon Bolívar: la formación de las economías nacionales y los intereses económicos europeos, 1800-1850 (Berlin 1989) pp. 73; D. Keremitsis *La industrial textil mexicana en el siglo XIX* (Mexico 1973) pp.187-96.

[156] D. Keremitsis *La industrial textil mexicana en el siglo XIX* (Mexico 1973) p.193; E. Beatty *Institutions and Investment: the political basis of industrialization in Mexico before 1911* (Stanford 2001) p.56.

[157] S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.59-61.

[158] Banco Tornquist Archive: Industrias File 144-8271,mimeo ‘Produción, Elaboración y Consumo del Algodón en la República Argentina’; The Times *The Times Book on Argentina* (London 1927) pp.218, 244

materials in question.'[159]. Raw material price and quality may have been a factor explaining the relatively poor export performance of Latin American mills in the early twentieth century, as various lobbies - including fibre growers - began to clamour for government support.

Textile Imports, Production and Exports (by way of a Conclusion)

Towards the end of the twentieth century, several Latin American countries appeared in the list of main world centred of textile manufacture. Among the top 15 producers in 1980, Brazil headed the Latin America list, ranking eighth overall: Mexico was the second, tenth overall: the Argentine third, eleventh overall. These three countries represented 3.7 percent, 2.8 percent and 1.9 percent, respectively, of total world textile production. At the top of the list was the USA, with 15.9 percent of the total, followed by Japan, with 11.0 percent, and Italy, with nine percent[160]. Yet, until very recently, Latin American producers have had little impact in world markets. During the post-Second World War period, and despite benefiting from apparently large domestic markets and modern factories, only Brazil and Colombia are numbered among the more successful global textile exporting countries[161]. Why, after c.1900 when modern mill are clearly in evidence, did Latin American cotton manufacturers fail to make a significant impact on the international textile?

Data on the Brazilian and Mexican cotton textile industries - by far the largest in Latin America - shows considerable growth and structural change from around 1900 onwards. As detailed in the previous section, plant was modernised and production reorganised. Cotton textiles companies had

[159] International Labour Office *The World Textile Industry: economic and social problems: vol. I* (Geneva: Studies & Reports Series B No. 27, 1937) p.205.
[160] J. Singleton *The World Textile Industry* (London 1997) p.14.
[161] J. Singleton *The World Textile Industry* (London 1997) p.23.

finally become - or were well on the way to becoming - big business in the Chandler mould. The evidence for Brazil is quite impressive.

Brazilian Textile Industry

	No of Firms	No. of Spindles	No. of Looms	No. of Workers	Output (000s mtrs)
1853	8	4,499	178	424	1,210
1866	9	13,977	346	795	3,586
1885	48	66,466	2,111	3,172	20,595
1905	110	734,928	26,420	39,159	N/a
1915	240	1,516,626	51,134	82,257	470,783
1925	257	2,345,809	70,561	114,561	535,909
1932	355	2,695,639	83,312	115,550	630,738
1946	420	3,076,336	92,469	234,864	1,142,151

Source: S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.191.

Information in the above table provides some evidence of the emergence of larger and more capital intensive firms between 1905 and 1925. The number of companies grew by about 120 percent, the number of workers almost tripled - as did the number of looms, and the number of spindles more than tripled. Output grew, progressively squeezing imports. Between 1901 and 1907 imports of cotton textiles averaged about 11 thousand tonnes a year. Imports declined in 1908 and 1909, but recovered in the years immediately before the First World War. After the War, imports never fully recovered. During the early 1920s imports ran at about a quarter or a third of the pre-War level, though rising to around seven thousand tonnes at the end of the decade. In the 1930s, annual imports were considerably less than one thousand tonnes[162]. During the latter stages of the porfiriato, there is convincing similar evidence of effective import substitution in Mexico. Between 1895 and 1908, assisted by tariffs, cotton textile imports declined at an annual average rate of

[162] S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) p.193.

four percent, while domestic production grew by five percent a year[163]. Even the late-developing Argentinian cotton textile industry was beginning to have some impact on imports by the 1920s, particularly in the cloth made of a woollen-cotton mix (considered to be more appropriate to the climate). British officials, although unable to refrain for smug observations that local producers did not aspire to produce goods of the same quality as imports, were anxious about the capacity of Manchester firms to compete in several segments of the market, especially as protection appeared to be on the cards by the late 1920s[164]. Factory capacity in the Argentine grew in the mid-1930s as the domestic market began to recover from the worst of the Depression recovery and imports were limited by lack of foreign exchange and tariffs: the number of spindles more than tripled from 43,000 to 159,000, and the number of looms from 1,500 to 1,800, suggesting a more intensive use of capacity[165]. In terms of factory capacity, by the mid-1930s, the largest cotton textile industries in Latin America were to be found in Brazil, which ranked first by a very substantial margin - accounting for approximately two-thirds the continental total of spindles and looms, Mexico - second (with around a third of the Brazilian capacity), Peru - third, the Argentine - fourth, Colombia - fifth, Ecuador - sixth[166]. In the larger economies, increasing scale must have brought some efficiency gains.

But, did increasing size yield a critical productivity surge? In 1910, weekly wage costs in Mexico were almost a half of those in Great Britain, but between five and three time higher than those in China, India and Japan. Worker productivity was considerably higher in Mexico than in the Asian economies, but only a half that of British workers. The result was that

[163] E. Beatty *Institutions and Investment: the political basis of industrialization in Mexico before 1911* (Stanford 2001) pp.41-2.
[164] UK Department of Trade *Report on the Commercial, Economic and Financial Conditions of the Argentine Republic, 1927* (London 1927) pp.21-23.
[165] International Labour Office *The World Textile Industry: economic and social problems: vol. I* (Geneva: Studies & Reports Series B No. 27, 1937) p.111.
[166] International Labour Office *The World Textile Industry: economic and social problems: vol. I* (Geneva: Studies & Reports Series B No. 27, 1937) p.111.

Mexican products could complete with neither British nor Asian cottons in world markets[167]. This is confirmed by Maurer and Haber who show that, despite institutional changes detailed above (including easier access to credit), there was little enhancement in the productivity of cotton textile firms over time. Nor did companies enjoying access to the capital market fare differently to those that did not have recourse to impersonal sources of credit. On the contrary. The main factor mitigating against a growth in total factor productivity was concentration. This points to defensive amalgamation, rather than efficiency-inducing economies of scale. Had the sector been less concentrated, Mexican firms might have been even larger, probably more efficient, and better placed to export[168]. By the early twentieth century, tariffs meant that Mexican producers were selling at home at prices half as high again as world prices[169]. With this degree of protection, there was little incentive to look beyond the domestic market. At these cost-prices levels, there was no prospect of selling overseas.

If world market penetration is a mark of intrinsic efficiency (or ability to mobilise official support for export promotion), the record of the cotton textile industry in Latin America was very poor before the 1960s. In this, it largely conforms to other manufacturing sectors. Only the Brazilian industry offers evidence of sporadic exports towards the end of the period studied. The record of exports to neighbouring republics, and to South Africa, during the First World War is well established. For purposes of comparison, in 1918 and 1919, Brazil imported 4,700 tonnes and 3,700 tonnes of cotton goods respectively, and exported 113 tonnes and 110 tonnes. Nevertheless, the impact of exports on domestic prices appears to have been such that the

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[167] J. Singleton *The World Textile Industry* (London 1997) p.27-8.
[168] N. Maurer & S. Haber 'Institutional Change and Economic Growth: banks, financial markets and Mexican industrialization, 1878-1913' in J.L. Bortz & S. Haber (eds.) *The Mexican Economy, 1870-1911: essays on the economic history of institutions, revolution and growth* (Stanford 2002) pp.46-7.
[169] E. Beatty *Institutions and Investment: the political basis of industrialization in Mexico before 1911* (Stanford 2001) p.74.

government threatened to prohibit sales overseas[170]. The volume of exports rose substantially in the early 1920s, peaking in 1923, then fell back rapidly and virtually disappeared, perhaps reflecting the continuing squeeze on imports. In the 1930s, there was some growth in cotton textile exports to neighbouring countries. This can be explained by bilateral clearing arrangements. The First World War export cycle was repeated during the 1940s. There was a surge in cloth exports at the beginning of the decade, followed by a steady decline after 1946/7. The main Second World War markets were South America and Africa, as during the previous conflict. By the end of the 1940s, British exporters had recaptured these markets, displacing Brazilian suppliers[171]. Exports of yarn and cloth by Mexican and Peruvian mills are also registered during the 1940s, and were equally ephemeral[172]. It is revealing that even the largest, and arguably most efficient, cotton textile mills in Latin America could only compete in world markets during exceptional times. Supporting the thesis of export failure during the period studied, there is only one example of a 'textile transnational' from Latin America - Alpargatas. The company produced coarse cloth and rope-canvas espadrille-type footwear. By the 1930s, the firm was operating plant in the Argentine, Uruguay and Brazil and its brand had become synonymous with the product, canvas sandals were commonly known as *alpargatas*[173]. There were other precocious Latin American 'transnationals from the Third World', like the Bunge y Born proto-conglomerate based on a group of families, but

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170 S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.193, 194; W. Dean *The Industrialization of São Paulo, 1880-1945* (Austin 1969) p.96.

171 E. Cobos *La industria algodonera en Iberoamérica* (Madrid 1953) pp.203-8; S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.193, 194

172 E. Cobos *La industria algodonera en Iberoamérica* (Madrid 1953) pp.208-11.

173 D. Chudnovsky, B. Kosacoff & A. López *Las multinacionales latinoamericanas: sus estrategias en un mundo globalizado* (Buenos Aires 1999) p.15; J. Katz & B. Kosacoff 'Multinationals from Argentina' in S. Lall (ed.) *The New Multinationals: the spread of Third World Enterprises* (London 1983).

these were *grupos financieros* rooted in the commodity export sector rather than manufacturing.

The history of industrial cotton textile production in Latin America is one of growth and effective import displacement before import-substitution industrialisation became a strategy for national development in the 1940s and 1950s. By the end of the nineteenth century, modern spinning and weaving mills were operating in most of the medium-sized and large economies, though imports of yarn and cloth continued to grown. Even before 1913, domestic production was supplying a very large share of apparent home consumption. During the inter-war decades local factories came to supply virtually the whole of the market. Investment in plant modernisation and in factory building was a feature of the 1920s and the 1930s. Indeed, anxiety about excess capacity surfaced in Brazil and Mexico at various times during these decades. In the 1930s there was even discussion of an export drive in Brazil: reduced domestic demand and capacity under-utilisation was represented as an opportunity - a necessity - to export. But nothing came of the project. Mill owners preferred cartelisation and output reduction. They were unwilling to underwrite an export campaign[174].

Export-led growth established the bases for modern textile manufacture, driving the infrastructural and institutional under-pinnings of industrial expansion. As producers of basic wages goods, particularly at the bottom end of the market, local mills enjoyed a comparative advantage once domestic demand had achieved a sufficient scale to warrant manufacture. Currency depreciation, especially in economies like Mexico and Peru which were on a silver standard until the beginning of the twentieth century, and Brazil which applied a paper currency regime for most of the period, provided an added degree of protection against imports, even before tariff policy became explicitly pro-manufacturing in the 1890s and 1900s in some republics. Somewhat

[174] S.J. Stein *Origens e evolução da indústria têxtil no Brasil, 1850-1950* (Rio de Janeiro 1979) pp.144-66.

easier access to institutional credit also facilitated structural reorganisation around 1900. Textile companies became larger and more 'managerial' - though the reality of the corporate model may have been more *grupo* than conglomerate. Increasing scale brought some efficiency gains, though not a quantum leap in productivity. A productivity 'failure' may explain why domestic craft production survived until quite late in the nineteenth century in many parts of the continent, and why the final squeeze on imports did not occur before the inter-war decades. Certainly, a productivity gap accounts for the inability to develop national industry as a platform for textile exports.[175]

Several factors explain the productivity gap. Labour costs were high by international standards, due to imperfect labour markets and investment costs associated with the recruitment and retention skilled workers. Perhaps sporadic efforts to rely on domestic raw material inputs also limited productivity/cost gains. Would a greater use of imported raw cotton have resulted in faster growth - and an earlier production of a broader and finer range of cloth? Imports of raw cotton and yarn indicate shortcomings on the part of domestic suppliers. Credit was also an issue. Local capital markets were small, and even when not subject to the cronyism observed in porfirian Mexico, rarely able to provide the degree of liquidity for which business clamoured. And what of entrepreneurship? Dean - and others - advance a persuasive thesis of entrepreneurial formation and textile-led industrial expansion. Yet, the counter view offered by Thomson also resonates. Although he writes narrowly about change in Puebla, his comments on 'modernising merchant-manufacturers' are telling. He observes that these agents changed the form, rather than the substance, of the prevailing model of capitalism. Outwardly dynamic, composed of established businessmen, merchants and foreigners, and committed to the adoption of new forms of industrial organisation and modern technology, these 'new industrialists' did not compose a distinct social groups: they were hardly a new class, a

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vanguard of socio-economic transformation signalling industrialisation[176.]
This view is diametrically opposed to that offered by Dean, but may explain the formation and endurance of *grupos*, not least in the textile sector, that manifest a degree of risk aversion which precluded venturing beyond home markets where knowledge - and political contacts - offered security. Were these agents endowed with the 'spirit' of enterprise and association?

[176] G.P.C. Thomson *Puebla de los Ángeles: industry and society in a Mexican city, 1700-1850* (Boulder 1989) pp.227-8.