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*The Manchurian Economy and the 1930s World Depression**

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Abstract

This paper analyses Manchuria's economic history between 1929 and 1936, as part of a larger project on the Great Depression's impact on China. Based on a new series for Manchurian GDP, 1924–1937, the paper advances four key arguments. First, early in the Depression, Manchuria's use of silver currency partially protected its economy from the global downturn, while creating serious problems for importers and Japanese-owned enterprises, resulting in a small net decline in GDP. Second, as elsewhere, the Depression's impact was deepest where cyclical effects were accompanied by structural change – here, the decline in the soybean trade. Third, output levels, especially in agriculture, declined most steeply in response to climatic and military disasters rather than economic shocks. Fourth, as in Japan, policies that were Keynesian in effect led to rapid growth of the modern sector, especially construction, and to the recovery of many sectors of Manchuria's economy from 1934–1935.

Introduction

The aim of this paper is to analyse the economic history of Manchuria between 1929 and 1936, as part of a larger project on the effects of the Great Depression on China. World-wide, there is surprisingly little direct analysis of the Depression's impact outside Europe and North America. Exceptions that deal with Asia include the work of Dietmar Rothermund, who has examined the issue on a global scale, though his treatment of East Asia and especially China is somewhat sketchy,

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and a useful collection of country studies edited by Ian Brown.[1] Earlier assumptions were that falls in commodity prices had a catastrophic effect on Asian countries and some still argue that certain groups, particularly the rural poor, were severely affected.[2] However, these views are now being challenged by a revisionist interpretation tending to downplay the Depression's impact and arguing that its macro effect was limited, certainly less than that of a failure of the monsoon.[3]

These broader debates are reflected in the study of China. Many scholars have made a negative judgement of the country's economic performance during the Depression. China's leading historian of its modern economy, Wu Chengming, writes:

> The economic crisis of 1932–1935 was, with the exception of the wars of invasion launched by foreign countries, the single most severe blow to the Chinese economy.[4]

Most Western scholars also used to accept that the 1930s saw a serious economic crisis in China. In his work on north Chinese agriculture, Ramon Myers wrote of the 'intolerable rural suffering' caused by the Depression and argued that the rural problems spilled over into urban commerce and industry.[5] David Faure has even suggested that the Depression was the cause of a fundamental discontinuity in the Chinese rural economy.[6]

In the case of China, as in that of Asia as a whole, this pessimistic evaluation has been challenged by scholars such as Loren Brandt, who argues that China experienced 'no contraction in economic

[1] Dietmar Rothermund, *The Global Impact of the Great Depression* (London: Routledge, 1996); Ian Brown (ed), *The Economies of Africa and Asia in the Inter-war Depression* (London: Routledge, 1989).

[2] Rothermund, *Global Impact,* pp. 10–11; Dietmar Rothermund, *India in the Great Depression, 1929–1939* (New Delhi: Manohar Publishers, 1992), p. 3.

[3] See for example some of the essays in Brown, *Economies* and A. J. H. Latham, *The Depression and the Developing World, 1914–1939* (London: Croom Helm, 1981), p. 185; Albert Feuerwerker makes this point explicitly for China, in *The Chinese Economy, 1870–1949* (Ann Arbor: Center for Chinese Studies, University of Michigan, 1995), p. 129.

[4] Xu Dixin and Wu Chengming (eds), *Xin minzhuzhuyi geming shiqi de Zhongguo zibenzhuyi* (Chinese capitalism in the period of the new democratic revolution), (*Zhongguo zibenzhuyi fazhan shi* [The history of Chinese capitalism], vol. 3) (Beijing: Renmin chubanshe, 1993), p. 5.

[5] Ramon H. Myers, *The Chinese Peasant Economy: Agricultural Development in Hopei and Shantung, 1890–1949* (Cambridge, Mass: Harvard University Press, 1970), p. 14.

[6] David Faure, 'The Plight of the Farmers: A Study of the Rural Economy of Jiangnan and the Pearl River Delta, 1870–1937', *Modern China* 11.1 (January 1985): 30–31.

activity'.[7] An initially sceptical Ramon Myers was persuaded that 'China simply did not experience any national economic depression as the world depression deepened', and Thomas Rawski argued that his data for economic activity 'leave little doubt that contemporary and retrospective accounts of the early 1930s as years of desperate crisis for China's economy contain large elements of exaggeration, particularly with regard to the modern and urban sectors'.[8]

In China's pre-war economy, any examination of the impact of internal or external shocks must take into account regional variations. An earlier part of my project examined the experience of China's south-west, concluding that, although this area deep in the interior did feel the effects of the Depression, climatic and military disruptions were much more important influences on its economy.[9] This paper, by contrast, focuses on one of the most developed parts of China, but one that was rent by international strife between China and Japan and occupied by Japan from 1931. It asks how far economic fluctuations in this highly commercialised area resulted from movements in the world economy, and how far from internal non-economic disturbances.

After a brief discussion of Manchuria's economic structure, this paper presents an estimate of trends in Manchurian GDP between 1924 and 1937. It then advances four key arguments. First, during the early years of the Depression, Manchuria's predominant use of silver currency provided partial protection from the global downturn to many sections of its economy, while at the same time creating serious problems for importers and for Japanese-owned enterprises. The net outcome was a decline—but only a relatively small one—in GDP. Second, as elsewhere, the Depression's impact was deepest where cyclical effects were accompanied by long-term structural change—in the case of Manchuria, the decline in the key trade staple, soybeans. Third, output levels, especially in agriculture, declined most steeply in response to climatic and military disasters rather than economic shocks. Fourth, as in Japan, policies that were Keynesian in effect, even if not in intention, led to a very rapid growth of the modern sector, especially construction and related industries, and to the recovery of many but not all sectors of the Manchurian economy from 1934–1935.

[7] Loren Brandt and Thomas J. Sargent, 'Interpreting New Evidence about China and U.S. Silver Purchases', *Journal of Monetary Economics* 23.1 (January 1989): 47.

[8] Ramon Myers, 'The World Depression and the Chinese Economy, 1930–6', in Brown, *Economies,* p. 275 note 1, and p. 274; Thomas G. Rawski, *Economic Growth in Prewar China* (Berkeley: University of California Press, 1989), p. 177.

[9] Tim Wright, 'Distant Thunder: The Regional Economies of Southwest China and the Impact of the Great Depression', *Modern Asian Studies* 34.3 (July 2000): 697–738.

TABLE 1
*Manchuria in the Chinese Economy**

	Manchuria	All China
Per capita GDP (*yuan*)	75	59
Per capita GDP 1952 (1952 *yuan*)	207	119
Proportion of agriculture in GDP	47	64
Proportion of modern industry and mining in GDP	6	3
Recorded external trade as a proportion of GDP	38	10
Silk as a proportion of total exports (1929)	2	19
Soybeans as a proportion of total exports (1929)	60	21

*1933 unless otherwise stated.
Sources: The Manchurian figures are mainly based on the author's GDP estimates; see Appendix. Kang Chao, *The Economic Development of Manchuria: The Rise of a Frontier Economy* (Ann Arbor: Center for Chinese Studies, University of Michigan, 1983), pp. 15, 16, 19, 20, 23, 26; K. C. Yeh, 'China's National Income, 1931–36', in Chi-ming Hou and Tzong-shian Yu (eds), *Modern Chinese Economic History: Proceedings of the Conference on Modern Chinese Economic History, Academic Sinica* (Taipei: Institute of Economics, Academic Sinica, 1979), pp. 98, 104; Tōa keizai chōsakyoku, *Mammō seiji keizai teiyō* (Politics and economy of Manchuria and Mongolia) (Tokyo: Kaizōsha, 1932), p. 211; Liang-lin Hsiao, *China's Foreign Trade Statistics, 1864–1949* (Cambridge, Mass: East Asia Research Center, Harvard University), pp. 24, 110, 114; Guojia tongji ju, Guomin jingji zonghe tongji si (ed), *Xin Zhongguo wushinian tongji ziliao huibian* (Statistical materials on the 50 years of new China) (Beijing: Zhongguo tongji chubanshe, 1999), pp. 3, 265, 267, 290, 292, 315, 317; Ta-chung Liu and Kung-chia Yeh, *The Economy of the Chinese Mainland: National Income and Economic Development 1933–1959* (Princeton: Princeton University Press, 1965), p. 35.

Economy and Currency in Manchuria[10]

Two features characterised the Manchurian economy and distinguished it from the rest of China: its greater levels of prosperity and commercialisation, and its use of both silver and gold currencies. First, as Table 1 shows, Manchuria was more industrialised, prosperous and involved in the world economy than China as a whole. It was also relatively commercialised: on average over half (53%) of total crop production was for sale, with the proportion being higher in the north

[10] Where possible, I use the term "Manchuria" to refer to the area of the three 1920s provinces of Liaoning, Jilin and Heilongjiang, along with the Japanese-controlled areas of Guandong and the South Manchurian Railway zone, but excluding the parts of Inner Mongolia that were included in the puppet state of Manchukuo in the 1930s. North Manchuria generally refers to the region of the old Chinese Eastern Railway (CER), north of Changchun (thus Heilongjiang and the northern part of Jilin), but is sometimes used in the sources to refer to the two provinces of Jilin and Heilongjiang.

than in the south.[11] This compares to a national average of around 43%.[12] Moreover, Manchuria's crops were sold in the world (rather than just the national) market. While the pricing issues addressed for contemporary China through purchasing power parity estimates of GDP mean that the figures in Table 1 exaggerate the role of foreign trade, it remains true that external trade weighed much more heavily in the Manchurian economy than in the Chinese. The last two rows show, however, that Manchuria was much more dependent on a single export commodity than was the country as a whole.

Second, the economy of Manchuria was strongly influenced by its use of a multi-currency system up to the 1930s. On the one hand a range of banknotes issued by Chinese provincial authorities predominated at the local level; they were mostly not convertible but could in the end be expected to fluctuate with some relationship to silver. On the other hand, Japanese currencies, both silver and gold, were influential in higher-level markets and the modern sector. Changes in the relative prices of the two metals therefore had a range of impacts on the Manchurian economy both before and during the Great Depression. After 1931, a new currency, at first tied to the Shanghai tael, replaced both the old Chinese currencies and increasingly the Japanese gold yen notes, so that the region essentially moved on to a silver standard, until it instituted a managed currency from 1935.[13]

Manchurian GDP during the Depression

Figures 1 and 2 present my estimates for Manchurian GDP between 1924 and 1937. These are largely, but not exclusively, based on Chao's figures for 1924, 1926, 1929, 1934, and 1936.[14] Chao's choice of these years fulfilled the requirements of his project to analyse

[11] Manshikai, *Manshū kaihatsu yonjūnen shi* (Forty years of Manchurian development) (Tokyo: *Manshū kaihatsu yonjūnen shi* kankōkai, 1964), vol. 1. p. 864; Li Shutian, *Zhongguo Dongbei nongye shi* (A history of agriculture in North-east China) (Jilin: Wenshi chubanshe, 1993), p. 486; see also 'Survey of Manchurian Agriculture', *Contemporary Manchuria* 2.2 (March 1938): 39.

[12] Xu and Wu, *Zhongguo zibenzhuyi*, p. 774; Liu Foding and Wang Yuru, *Zhongguo jindai de shichang fayu yu jingji zengzhang* (Economic growth and the development of the market in modern China) (Beijing: Gaodeng jiaoyu chubanshe, 1996), p. 74.

[13] Yasutomi Ayumu, '*Manshūkoku*' *no kinyū* (Finance in Manchukuo) (Tokyo: Sōbunsha, 1997), pp. 53–4; *Manchoukuo Year Book, 1934* (Tokyo: Toa keizai chosakyoku, 1934), p. 608; *Japan-Manchoukuo Year Book* (Tokyo: Japan-Manchoukuo Year Book Co, annual), 1935, p. 659, 1937, p. 760.

[14] Chao, *Economic Development*, pp. 31–120.

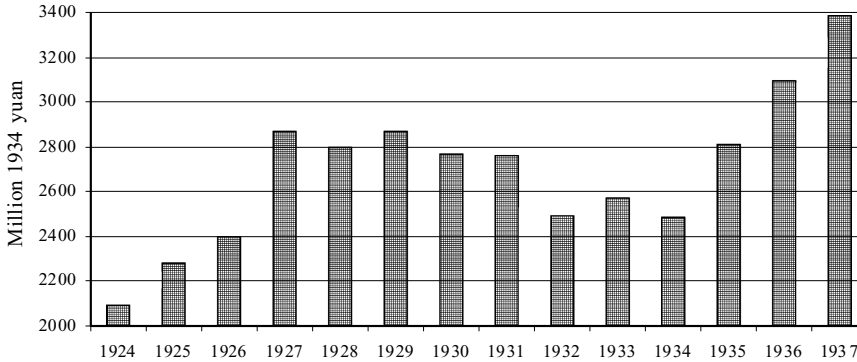

Figure 1. Manchurian GDP 1924–1937 (million 1934 yuan).
Sources: See Appendix.

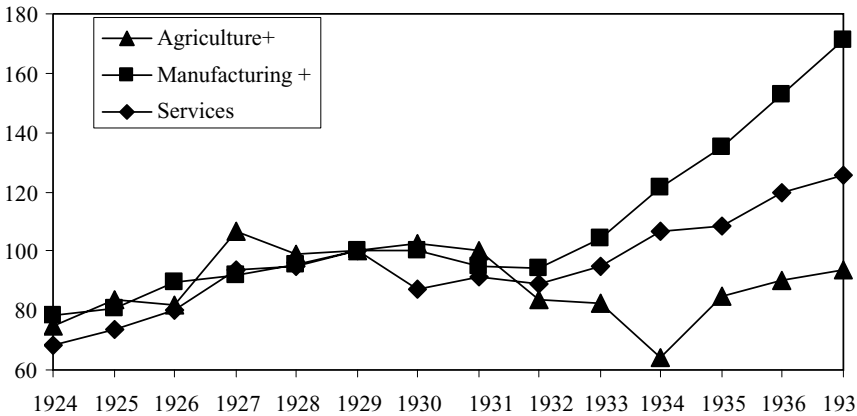

Figure 2. Indices of Sectoral Value Added, 1929=100.
Note: Agriculture+: agriculture, fisheries, farmers' subsidiary output, lumber. Manufacturing+: mining, modern and traditional industry, construction. Services: transport, trade, government and professional employers, imputed rents.

long-term structural changes in the Manchurian economy. But, for obvious reasons, it does not enable me to analyse medium term economic fluctuations. Therefore, as outlined in the Appendix, I have essentially tried to fill in the years intervening between Chao's benchmarks to generate an annual series 1924–1937, using but also updating his data and methodology.

Figure 1 makes it clear that the Manchurian economy suffered a severe downturn in the early 1930s, with GDP in 1932 being 13% lower than in 1929. The decline began gradually in 1930–31, and accelerated the next year. The years 1933–34 remained basically

depressed, before the economy began to recover from 1935. As the disaggregated data in Figure 2 show, different sectors experienced different trajectories, especially after 1933. The 1930–31 downturn was mainly experienced in the modern trading sector, with also an almost 20% decline in modern transportation.[15] Mining, factory industry and construction also declined in 1931. From 1932, agricultural production, which had largely escaped the earlier decline, began to plummet: it fell 16% in 1932 and, after remaining more or less constant in 1933, a further 22% in 1934. Industry and the modern sector began, however, to recover from 1933.

Impact of the World Depression: Trade-Generated Depression in 1930–1931

During the first years of the Depression, 1930–31, its predominant use of silver currency offered Manchuria, like China, some protection, but intensified the problems of enterprises dependent on imports or using gold-based currencies. As shown in Figure 1, the outcome was a decline—albeit one of only 3.5% in 1930, and a further 0.5% in 1931—in GDP, originating in the trade, modern transport and mining sectors.

Whereas in many countries the gold standard played a crucial role in both causing and prolonging the Great Depression until they abandoned gold, thereby devaluing their currencies,[16] China and Manchuria enjoyed an automatic devaluation through the fall in their silver currency, so that they were relatively lightly affected in the early years.[17] As shown in Table 2, the fall in the value of silver and silver currencies vis-à-vis gold and gold currencies greatly accelerated during the Depression, so that the value of the Chinese silver *yuan* fell between 1925 and 1927, stabilised for two years, and then plummeted between 1929 and 1931.

The benefits of devaluation were twofold. First, it was inflationary, and Figure 3 shows the contrast between deflation during 1929–31 for

[15] Note that, in the GDP estimates, value added in the trade sector is basically a function of trends in modern transport.

[16] Peter Temin, *Lessons from the Great Depression* (Cambridge, Mass: MIT Press, 1991).

[17] Cheng-chung Lai and Joshua Jr-Shiang Gau, "The Chinese Silver Standard Economy and the 1929 Great Depression", *Australian Economic History Review* 43.2 (July 2003): 155–68; Sir Arthur Salter, *China and the Depression: Impressions of a Three Month Visit* (Shanghai: National Economic Council, 1934), p. 7.

TABLE 2
Silver: Gold Exchange Rates 1925–1937

Year	Price of Silver US$ cents/ounce	Value of Chinese silver dollar in Japanese yen	Year	Price of Silver US$ cents/ounce	Value of Chinese silver dollar in Japanese yen
1925	69.4	1.32	1931	29.0	0.45
1926	62.4	1.02	1932	27.5	0.77
1927	56.7	0.93	1933	35.0	1.01
1928	58.5	0.99	1934	48.2	1.13
1929	53.3	0.89	1935	64.3	1.26
1930	38.5	0.59	1936	45.1	1.02

Sources: Kong Min et al comp, *Nankai jingji zhishu ziliao huibian* (Collection of Nankai economic indices) (Beijing: Zhongguo shehui kexue chubanshe, 1988), p. 485; Hsiao, *China's Foreign Trade Statistics*, p. 192 (figures for taels converted into dollars).

countries with gold currencies, while in silver-using countries prices were maintained or even increased. Manchuria used both types of currency: trends in mainly gold currency (yen) are shown in Figure 3, and Table 4 shows contrasting trends in Dalian soybean prices when expressed in gold or silver. Likewise, in 1930 the devaluation of the local *Dayang* currency kept prices of soybeans and wheat in Harbin high.[18]

Second, devaluation allowed exporters to cut prices, for example of soybeans, in order to maintain overseas markets, while limiting the impact on local incomes: north Manchurian farmers 'did not perceive' the fall in agricultural prices in 1930 because prices in Harbin *Dayang* actually remained higher than in the mid 1920s, though those in Japanese yen had fallen sharply.[19] This made Manchuria's exports more competitive and protected it from some of the effects of declining world demand for agricultural products (exacerbated by good harvests worldwide in 1929) and the consequent reduction in their (gold but not silver) price. Although contemporary sources stressed the difficulties

[18] 'Kokumin seifu no kinkai ginka no kinyu to ginka no kinkyō' (The recent price of silver and the government ban on shipments of gold and silver), *Mantetsu chōsa geppō* (Monthly Reports of the Research Institute of the South Manchurian Railway) (hereafter MCG) 10.6 (June 1930): 59; see also Qi Min, 'Minguo shijiunian Ji Hei zhi shangqing' (Commerce in Jilin and Heilongjiang in 1930), *Zhongdong jingji yuekan* (Chinese Eastern Railway Economic Monthly) (hereafter ZJY) 7.2 (February 1931): 22.

[19] Sun Zuyuan, 'Dadou luojia sheng zhong Ji-Hei liangsheng nongcun zhi sunshi' (Losses suffered by Jilin and Heilongjiang villages because of the fall in soybean prices), *Zhongdong banyuekan* (Chinese Eastern Railway Semi-monthly) (hereafter ZB) 3.4 (1 March 1932): 5.

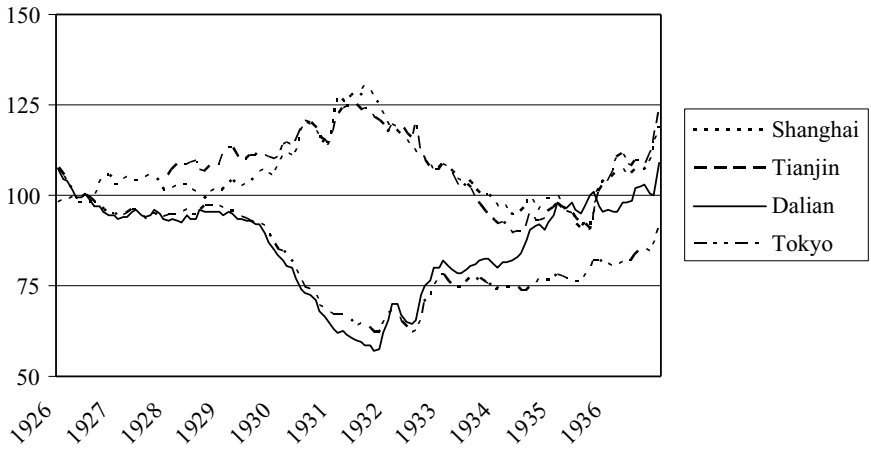

Figure 3. Wholesale Prices in Dalian, Shanghai, Tianjin and Tokyo, 1926–1936 (Index, 1926 = 100).
Note: Reflecting changes in the nature of Manchuria's currency system, the Dalian series for 1935–1936 is not entirely consistent with that for 1926–1934.
Sources: Zhongguo shehui kexue yuan Shanghai jingji yanjiu suo and Shanghai shehui kexue yuan jingji yanjiu suo, *Shanghai jiefang qianhou wujia ziliao huibian (1921 nian—1957 nian)* (Price statistics for Shanghai, 1921–1957) (Shanghai: Renmin chubanshe, 1958), p. 126; Kong, *Nankai jingji zhishu*, p. 7; *Manshū keizai tōkei nempō* (Manchurian year book of economic statistics) (Tokyo: Minami Manshū Tetsudō Kabushiki Kaisha [South Manchurian Railway Company] [hereafter, SMR], Keizai chōsakai, annual), 1932, p. 30. 1934, p. 45; Nihon ginko, Chōsakyoku, *Hompō keizai tōkei* (Economic statistics of Japan) (Tokyo: Nihon ginko, annual), 1937, p. 99; 1938, p. 102.

TABLE 3
Soybean Prices in Dalian, 1927–1933 (Indices 1929=100)

Year	gold currency*	silver currency
1927	108.80	102.01
1928	106.25	101.15
1929	100.00	100.00
1930	78.97	115.47
1931	46.97	89.42
1932	75.02	78.78
1933	86.87	73.43

*i.e. Japanese yen, which was taken off the gold standard in December 1931.
Manshū keizai nempō (Economic year book of Manchuria) (Tokyo: SMR, Keizai chōsakai, annual) (hereafter, MKN), 1935, p. 186; see also Ramon Myers, *The Japanese Economic Development of Manchuria, 1932 to 1945* (New York: Garland, 1982), p. 78; *Manchoukuo Year Book, 1934*, p. 284.

TABLE 4
Foreign Trade of Manchuria, 1926–1937 (million current yuan)

Year	Imports	Exports	Total
1924	312.5	419.0	731.5
1925	381.2	486.7	867.9
1926	431.3	577.6	1008.9
1927	418.9	635.6	1054.5
1928	471.9	676.2	1148.1
1929	513.5	663.1	1176.6
1930	478.3	618.1	1096.4
1931	341.0	722.8	1063.8
1932	337.7	618.2	955.9
1933	515.8	448.5	964.3
1934	593.6	448.4	1042.0
1935	604.1	421.1	1025.2
1936	691.8	602.8	1294.6
1937	887.4	645.3	1532.7

Source: Chao, *Economic Development*, p. 23.

of the export trade, by 1934 Japanese commentators were recognising 1929–30 as a period of relative calm for the Manchurian economy and of health for the soybean export trade.[20]

Nevertheless, at best devaluation mitigated the worst effects of the intensifying World Depression,[21] which seriously destabilised the trade sector. The values of imports, exports and total foreign trade all fell by over 6% in 1930. But the fates of imports and exports diverged in 1931: imports declined by almost 30% but exports grew by over 15%. Insofar as Manchuria was on a silver standard, this was an expected response to devaluation. Total external trade fell through to 1932, when it was almost 20% lower than in 1929.

Even with regard to exports, devaluation did not protect all sectors of the economy. In north Manchuria, export trade declined sharply, affected by the Sino-Russian hostilities as well as Depression-related factors such as difficulties with the US market and high freight rates on the CER, which used gold currency. Shipments from Ang'angxi fell by 30% in 1930 and a further 60% in 1931, those from Hailar fell by over

[20] Shan Yang, 'Yinjia baoluo yu Dongsansheng suoshou de yingxiang' (The collapse of the silver price and its impact on Manchuria), ZJY 6.6 (June 1930): 2–3; Ji Wu, 'Jiji kewei zhi Harbin jingji jie' (Harbin's economy in crisis), ZB 1.2 (1 August 1930): 41, 43; 'Ginka yakutō to Manshūkoku heisei no kiki' (The rise in the price of silver and the crisis of the Manchukuo currency), *Manshū hyōron* (Manchurian Forum) (hereafter MH) 7.18 (2 November 1934): 6.

[21] 'Ginka bōraku to Dairen zaikai' (The Dalian financial sector and the fall in the price of silver), *Dairen shōkō geppō* (Monthly of the Dalian Chamber of Commerce and Industry) (hereafter DSG) 179 (July 1930): 46.

half from 1928 to 1931.[22] More broadly, unlike in China, important parts of the Manchurian economy operated on the basis of Japanese gold-based currency, and Japanese enterprises found the competitive position of their products deteriorating both internally and externally. The most important example was Fushun coal, which became less competitive along the China coast; its difficulties accounted for most of the decline in mining output. Meanwhile, its parent company, the South Manchurian Railway Company (SMR), also suffered from a switch of freight to Chinese-owned lines, as the rise of gold made its freight rates relatively more expensive.[23]

As one would predict, devaluation led to a sharp reduction in demand for imported goods triggered by the decline in the purchasing power of the silver currencies used by the population.[24] This seriously affected importers, and caused numerous bankruptcies as consumers switched to cheaper Chinese goods.[25] In Dalian, half the Chinese merchants dealing in imports faced bankruptcy, while those dealing in imported flour and other goods found themselves unable to take delivery of goods they had earlier contracted to buy from Mitsui and Mitsubishi, leading to unpaid bills of over 300,000 *yuan*.[26] The Liaoning Chamber of Commerce demanded government action to help deal with the effects of the fall in silver.[27] The problems extended to smaller centres, such as Changtu (Liaoning), where traders in the whole range of imported goods faced large losses.[28] Foreign merchants, both Japanese and Western, were also seriously affected, and cheap silver led to the closure of a major Russian firm in Changchun.[29]

[22] SMR, Hoku-Man keizai chōsajo, *Manshū jihen oyobi Hoku-tetsu sesshū ni okeru Hoku-Man shuyō toshi no keizaiteki dōkō* (Economic trends in north Manchurian cities following the Japanese invasion and the purchase of the Chinese Eastern Railway) (Harbin: Hoku-Man keizai chōsajo, 1937), pp. 48, 52, 75.

[23] Dairen shōkō kaigisho, *Shōwa gonen Dairen keizai nenshi* (Dalian's economy in 1930) (Dalian: Dairen shōkō kaigisho, 1931), pp. 134–5.

[24] SMR, Shomubu, Chōsaka, *Showa gonen Manshū seiji keizai jijō* (Manchurian politics and economy in 1930) (Dalian: SMR, 1931), pp. 167–9; Dairen shōkō kaigisho, *Shōwa rokunen Dairen keizai nenshi* (Dalian's economy in 1931) (Dalian: Dairen shōkō kaigisho, 1932), p. 54.

[25] Zuo Fei, 'Minguo shijiunian Harbin gongshang geye zhi huigu' (Harbin's commerce and industry in 1930), ZB 2.7 (16 April 1931): 5.

[26] 'Kin kaikin to Dairen keizaikai' (Dalian's economy and Japan's adoption of the gold standard), DSG 175 (March 1930): 10–11; *Shengjing shibao* (Shengjing Times) (hereafter SS), 29 May 1930, p. 7, 18 June 1930, p. 4.

[27] SS, 8 June 1930, p. 4.

[28] SS, 5 June 1930, p. 7.

[29] SS, 26 August 1930, p. 4 and 6 March 1931, p. 5.

The troubles of the trade sector spread throughout the region: north as well as south, smaller rural centres as well as the larger cities. As early as late 1929, the fall in silver prices caused numerous bankruptcies among Chinese merchants, with a serious depression developing the following year.[30] Profit figures indicate a downturn in Dalian in the first half of 1930: out of seventeen sectors, fourteen made profits of various magnitudes, but the stock exchange, commerce and finance, and trade in goods all made losses (the banking sector was, however, profitable).[31] Overall, 1050 small-scale traders closed their doors in the SMR zone in spring 1930 and by the autumn festival the problems were spreading to larger and more well-established firms.[32] Falling trade led to depression in the economies of Jilin and Heilongjiang throughout 1930 and 1931, and over four hundred Chinese firms in Harbin closed in early 1931, with the fall in the Harbin *Dayang* currency taking the blame.[33]

Transport also suffered, with value added by the railways falling by over 20% in 1930. This reflected a falling off, across the region, in the transport both of imported goods, no longer affordable by the Chinese masses, and of export goods, hit by the decline in Manchurian-Japanese trade.[34] Shipping also declined by over 10% in volume, with a decline in demand from Japan and elsewhere, while excess capacity worldwide also meant that freight rates were cut by as much as 35%.[35]

Even in this earlier period, however, factors other than the world economy impacted on Manchuria's trade and GDP. The instability of the local Chinese currencies, triggered partly by the decline of silver but also partly by warlord machinations, created chaos and militated against the smooth operation of the economy. Nor were all important factors economic. The hostilities between China and Russia in late 1929 severely disrupted the whole regional economy through their

[30] SS, 12 January 1930, p. 7; Zuo, 'Harbin gongshang geye', p. 5.

[31] 'Dairen ni okeru gonendo jitsugyōkai no seiseki' (The performance of Dalian's industry in 1930), DSG 186 (February 1931): 32–3.

[32] Xie Ziji, 'Qunian Dongbei Huashang zhi tuikuang' (The decline of Chinese merchants in Manchuria last year), ZB 2.23/24 (August 1931): 8–9.

[33] Jin Sheng, 'Yijiusanyinian Ji-Hei shangshi zhi gaikuang' (Commerce in Jilin and Heilongjiang in 1931), ZJY 8.3/4 (April 1932): 19; SS, 26 February 1931, p. 5.

[34] 'Ginka bōraku to Mantetsu kamotsu no ryūshutsu' (The SMR's loss of freight and the fall in the price of silver), DSG 181 (September 1930): 15; SS, 5 April 1931, p. 5.

[35] 'Kin kaikin to Dairen keizaikai', p. 12.

impact on soybean production in north Manchuria.[36] Nevertheless one observer concluded: 'The economic crisis in Harbin and the Jilin-Heilongjiang region is simply part of the world economic crisis . . . and as such is difficult to avoid'.[37]

Structural Change: Decline of the Soybean Staple

In Manchuria, as elsewhere, the impact of cyclical movements in the world economy was greatest where these interacted with longer-term structural changes, most importantly in this case the decline of the soybean trade. Despite the region's relatively high level of economic development, agriculture remained the predominant sector, contributing over 50% of GDP in the late 1920s. Unlike elsewhere in China, the main crop was a cash crop, and indeed one destined for export. As Table 5 shows, in the late 1920s soybeans and soybean products were so much the lynchpin of the regional economy that Japanese scholars designated it a 'soybean economy'.[38] Soybeans were the main staple of foreign trade—for China as well as Manchuria. Within Manchuria, bean processing also contributed about 30% of industrial value added. Dependence was strongest in the north. While the south's economy was relatively diversified, with a substantial subsistence sector, the north was very heavily dependent on soybean production and processing. Around half the goods traffic on the CER consisted of soybeans and soybean products.[39] The decline in this trade had a profound effect on the whole region, and by 1934 the value added by soybeans declined by 35% and their share of the economy by about 25%.

The problems of soybeans in Manchuria can be compared with those of silk in China. Silk was the trade main staple of the Lower Yangzi, Guangdong and Sichuan, but similarly lost its predominant position. In both cases short-term cyclical factors were joined by long-term

[36] Wang Cenbo, 'Harbin jingji zhi shuailuo yu jiuji' (The decline of Harbin's economy and recovery measures), ZB 2.3 (16 February 1931): 4.

[37] Ji, 'Jiji kewei zhi Harbin jingji jie', p. 40.

[38] Kaneko Fumio, *Kindai Nihon ni okeru tai-Manshū tōshi no kenkyū* (A study of Japanese investment in Manchuria) (Tokyo: Kondō shuppansha, 1991), pp. 324–33.

[39] 'Ichikyūsanichi nendo Chūtō tetsuro yusō seiseki' (Transport volumes of the Chinese Eastern Railway in 1931), MCG 12.5 (May 1932): 190–2.

TABLE 5
Soybeans in the Manchurian Economy (1930 and 1934) (million 1934 yuan)

	1930		1934		
				Value added as % of	
	Gross Output value	Value added as % of Manchurian GDP	Gross Output value	Manchurian GDP	Chinese GDP
Production of raw materials (agriculture)	305.7	10.1%	196.1	7.2%	0.67%
Processing	128.5	0.5%	87.2	0.4%	0.04%
Total	434.2	10.6%	283.3	7.6%	0.7%
Exports	363*		228		

Units: million 1934 yuan.
*: current yuan.
Sources: Author's estimates; Liu and Yeh, *Economy*, pp. 66, 140, 143; Chao, *Economic Development*, pp. 26, 46; Hsiao, *China's Foreign Trade Statistics*, p. 110, 114.

changes in technology and demand, and the decline was more than temporary, with the 1950s seeing much lower levels of production.[40]

The decline in demand for soybeans was partly cyclical, the result of reduced purchases of fertilisers among Depression-affected farmers in Japan and south China. One observer wrote, 'The recent fall in soybean prices has been attributed by most pessimists to surplus production and reduction in consumption. But the real reason is the harmful effects of the general world economic situation'.[41]

The long-term structural factors affecting overseas markets were, however, at least equally important. Bean products—beancake, bean oil and soybeans—each had different uses and different markets, and so faced different pressures. Beancakes were sold as fertiliser mainly in Japan but also, up to 1932, in south China. Sales were under threat in both areas. Just as the rise of artificial fibres permanently undermined

[40] For a contemporary comparison between the Manchurian soybean industry and the *Japanese* silk industry see Kaetsu Shūji, 'Manshū daizu oyobi sono kōgyō no zento' (Manchurian soybeans and the future of the industry), MCG 12.2 (February 1932): 1–5. Liu and Yeh estimate national soybean production during the 1950s at around half the level of 1933 (when output had already declined from the late 1920s). Production of silkworm cocoons was also running at less than half the 1933 level. See Liu and Yeh, *Economy*, pp. 248–50, 262.

[41] Ren Fengdu, 'Shijie jingji konghuang dui Dongsansheng dadou zhi yingxiang' ' (The impact of the world economic crisis on Manchurian soybeans), ZB 2.13 (16 July 1931): 4.

TABLE 6
Exports of Soybean Products from Manchuria in the 1920s and 1930s (million current yuan)

Year	To Japan	To Europe	To China	Total
1927	78	69	48	330
1928	91	66	50	362
1929	96	51	80	363
1930	70	60	61	288
1931	92	117	84	394
1932	81	88	106	366
1933	71	77	29	245
1934	68	66	19	228
1935	73	63	16	202
1936	103	84	25	285

Note: figures include exports of soybeans, beancake and bean oil.
Sources: Manchoukuo, Department of Finance and Commerce, *Annual Returns of the Foreign Trade of Manchoukuo* (Xinjing: Department of Finance and Commerce, annual), 1933, 1935, 1936; China, Maritime Customs, *Foreign Trade of China* (Shanghai: Inspector General of Customs, annual), 1928, pp. 136–7, 230, 267, 1931, pp. 143–4, 235–6, 274; Hsiao, *China's Foreign Trade Statistics*, pp. 81, 96.

the position of silk at the top end of the textile market, growing competition from chemical fertilisers reduced demand for beancakes in Japan by half between 1926 and 1933, as consumption of cheap ammonium sulphate more than doubled. The reduction in exports to China, which Table 6 indicates was more drastic than in those to other destinations, can largely be attributed to political factors, notably boycotts of Manchurian goods after 1932.[42]

Bean oil was mostly exported to Germany and Europe, where it was used for food production, as well as for paint and other industrial uses. By the 1930s, however, European countries were starting to develop their own bean-pressing industries and, instead of importing Manchurian bean oil, increasingly shifted to importing beans and pressing their own oil.[43] For unprocessed soybeans, Germany was also the largest market and took as much as one quarter of the Manchurian crop, pressing the beans for their oil.[44] However, the autarchic policies of the early Nazi regime, such as a quota on vegetable oil imports imposed in January 1934, led to a sharp decline in demand even for

[42] MKN, 1935, p. 160.
[43] *Japan-Manchoukuo Year Book*, 1934, pp. 601–3.
[44] MKN, 1935, pp. 162–3.

unprocessed beans between 1933 and 1936, threatening the basis of the Manchurian industry.[45]

These cyclical and long-term factors triggered a decline in soybean exports, by volume and value. Table 7 indicates firstly that devaluation did protect the soybean trade. Despite a 19% fall in exports by value and volume in 1930, both recovered to peak in 1931, as a result of increased demand in Japan and China, as well as of low prices, while preferential policies by the SMR helped keep down costs.[46] However, the later rise in the value of silver against gold reduced the competitiveness of Manchurian exports and led to a downturn in the soybean trade from 1932,[47] accelerating in 1933 and bottoming out in 1935 at around 60% of the 1931 volume and under half in terms of value. The year 1936 saw a moderate recovery, as well as some rise in prices, but the trade remained 30% below the level of the late 1920s.

The decline of the major export markets led, according to the SMR, to a fundamental change from 1933 in the trend of the production of soybean crops, with the long-term trajectory moving from growth to stable production at a lower level.[48] As a result, the Manchukuo authorities started to investigate alternative and more profitable crops, such as wheat in the north and cotton in the south, while farmers also switched to growing other sorts of beans and even paddy rice.[49] Nevertheless, throughout the early and mid 1930s, soybeans still accounted for around 24–26% of grain output by value. In the

[45] Seki Tadao, 'Manshū keizai no genkaidan' (The current stage of the Manchurian economy), MH 8.1 (1 January 1935): 14; F. C. Jones, *Manchuria Since 1931* (London: Royal Institute of International Affairs, 1949), p. 201; Harubin shōkō kōkai, *Harubin keizai gaikan, Kōtoku gonenkan* (The Harbin economy, 1938) (Harbin: Harubin shōkō kōkai, 1938), p. 60.

[46] Mei Zhongying, 'Zuijin sannian Dalian ge youfang zhi zhibin qingxing ji qi xiaozhang yuanyin' (Recent rise and fall of the production of beancake by Dalian bean mills), ZJY 8.5 (May 1932): 17–9; MKN, 1933, p. 221; Jie Xueshi, *Wei Manzhouguo shi xinbian* (A new history of the puppet state of Manchukuo) (Beijing: Renmin chubanshe, 1995), p. 325.

[47] 'Shōwa shichinendo Dairen kannai kigyō seiseki' (Performance of Dalian industry in 1932), DSG 212 (April 1933): 2.

[48] SMR, Chōsabu, *Manshū nōsan bukkakaku kōteisei no kenkyū* (On the fixing of prices for Manchurian agricultural products) (Dalian: SMR, 1940), pp. 17–8.

[49] 'Tokusan keizai no nōgyō kyōkō taisaku ni tsuite' (On policies to deal with the agricultural crisis in the export products economy), MH 5.17 (21 October 1933): 5; SMR, *Fifth Report on Progress in Manchuria to 1936* (Dalian: SMR, 1936), pp. 79–80; Hōten shōkō kaigisho, *Hōten sangyō keizai no genshi* (Shenyang's industry and economy) (Fengtian: Hōten shōkō kaigisho, 1937), p. 56.

TABLE 7
Manchurian Soybean Production and Trade During the Depression (Indices, 1929=100)

Year	Soybean exports, volume	Soybean and beancake exports, value (silver)	Soybean production
1927	66.9	84.7	99.3
1928	88.1	96.3	99.9
1929	100.0	100.0	100.0
1930	81.3	81.1	109.3
1931	102.8	107.5	107.8
1932	92.9	92.0	88.0
1933	85.7	61.6	94.9
1934	90.5	57.3	70.1
1935	64.0	50.7	79.5
1936	71.3	71.6	85.3

Sources: Chao, *Economic Development*, p. 26; Yamamoto Yūzō, '*Manshūkoku' keizaishi kenkyū* (An economic history of 'Manchukuo') (Nagoya: Nagoya daigaku shuppansha, 2003), pp. 98–9.

longer term, greater adjustments were made and, by the 1950s, their proportion fell to around 17%.[50]

The structure of industrial production changed even more strikingly, with a steep decline in soybean processing. The output of bean mills in Dalian fell by over 20% in 1933,[51] and the industry never recovered. In 1936–1937 output of beancakes and bean oil was running at only around half of the peaks of 1926 and 1931. In the north, the output of the bean-pressing industry declined by 60% in 1932. The Harbin Chamber of Commerce and Industry interpreted this as a result of high prices of coal and adverse movements in freight rates within Manchuria, favouring the bean mills of south Manchuria; those factors were, however, probably not a sufficient explanation, and longer term shifts in demand were also important. There was little sign of recovery even in 1936, when the number of bean mills operating in Harbin was only one-third the 1928 level.[52]

[50] *Liaoning jingji tongji nianjian, 1987* (Year book of economic statistics of Liaoning, 1987) (Beijing: Zhongguo tongji chubanshe, 1987), p. 516; *Jilin shehui jingji tongji nianjian, 1987* (Year book of social and economic statistics of Jilin, 1987) (Beijing: Zhongguo tongji chubanshe, 1987), p. 132; *Heilongjiang tongji nianjian, 1987* (Heilongjiang statistical year book, 1987) (Beijing: Zhongguo tongji chubanshe, 1987), p. 171.

[51] 'Shōwa hachinen Dairen kōgyō seisan jōkyō' (Dalian's industrial production in 1933), DSG 225 (May 1934): 12–5.

[52] Ōshima Tadashi, 'Hoku-Man ni okeru yufusa kōgyō no genjō' (The current situation of the bean mills of north Manchuria), MCG 16.11 (November 1936):

As a consequence, the proportion of bean products (oil and cake) in total industrial value added fell from more than 30% in the mid 1920s to 20% in the early 1930s before declining even more sharply to 11% in 1933–4 and only 4–5% on the outbreak of war. Even though this change in part reflected the rapid growth of other industries under Japanese auspices, nevertheless it offers a graphic illustration of the long-term structural changes in Manchuria's economy.

The Impact of Non-Economic Shocks: Agricultural Depression in the 1930s

The long-term decline of soybeans was only one of the causes of a generalised rural depression that affected both agricultural production and farm incomes in Manchuria. In the early and mid 1930s, even while industry and the modern sector began to show signs of recovery,[53] agriculture in Manchuria—as in the rest of China—went into steep decline, reaching a trough in 1934.[54] There were sharp falls in total agricultural production over these years—16% in 1932, a further 2% in 1933 (due to a large drop in livestock production, as there was a slight recovery in grain output), and then a massive 23% in 1934, when the sector reached its nadir. The British Consul reported a 20% decline in crop production in 1934 from the already poor year of 1933. Next year the Consul confirmed that 1934 had been 'an exceptionally bad year'.[55] Of the major crops, soybean production fell by 26% in 1934, gaoliang by 14% and millet by 33%.[56] In China

147; Kungtu C. Sun, assisted by Ralph W. Huenemann, *The Economic Development of Manchuria in the First Half of the Twentieth Century* (Cambridge, Mass: East Asian Research Center, Harvard University, 1969), p. 98; Harubin shōkō kōkai, *Harubin keizai gaikan*, p. 65; Ōshima, 'Yufusa kōgyō', pp. 141–2; 'Atarashii unchin seisaku to Hashi yubō' (The new freight rate policy and the Harbin bean mills), MH 10.5 (1 February): 8–9; Xin Peilin et al, *Heilongjiang kaifa shi* (The development of Heilongjiang) (Harbin: Renmin chubanshe, 1999), p. 375.

[53] 'Shōwa shichinen Dairen kōgyō seisan jōkyō' (Dalian's industrial production in 1932), DSG 214 (June 1933): 8–9.

[54] See Appendix for a discussion of questions regarding the 1934 figures.

[55] 'Annual Report on Manchukuo for 1934', in *Japan & Dependencies: Political & Economic Reports, 1906–1960*, ed. R. L. Jarman (Slough: Archive Editions, 1994), vol. 14, p. 270; 'Report on Economic Conditions in Mukden Consular District, December Quarter 1935', in *Japan & Dependencies*, vol. 15, p. 68.

[56] Yamamoto, '*Manshūkoku' keizaishi kenkyū*, pp. 98–9.

as a whole, a similar sharp decline in agriculture production in 1934 led to the trough of the depression there.[57]

Despite the higher level of commercialisation of Manchurian agriculture, movements in the world economy alone were not sufficient to plunge the whole sector into depression. Both there and elsewhere in China agricultural decline resulted from a congruence of economic fluctuations (the Depression), political disturbances (the Japanese occupation and its aftermath) and climatic shocks (floods and droughts).

The balance between the effects of economic and non-economic factors on agricultural production has wider significance in Chinese history. In arguing that the World Depression had little effect on China, both Brandt and Myers explain the 9% decline in China's 1934 GDP as the result not of global economic conditions but of poor crops in north China.[58] However, for China as a whole, Liu's table actually lists greater crop losses from natural disasters in 1935 and 1936: although the area affected in 1935 was (according to incomplete figures) smaller than in 1934, that affected in 1936 was larger.[59] Moreover, climatic conditions are seldom the same across areas as large as China, and figures for other north China provinces show at most a mixed trend.[60] So the contention that 1934 experienced uniquely bad weather conditions in China as a whole must be open to some doubt.

Agricultural Production

In Manchuria, the continuing impact of the Depression was a contributing factor to agricultural decline. Indeed, despite the supply problems outlined below, even in 1934 the SMR was more concerned

[57] Yeh, 'China's National Income, 1931–36', p. 97; see also Liu Kexiang, '1927–1937 nian nongye shengchan yu shoucheng, chanliang yanjiu' (A study of harvests and agricultural production, 1927–1937), *Jindai shi yanjiu* (Studies in Modern History) 2001.5 (October 2001): 106; Makino Fumio, 'Chūgoku nōgyō seisandaka no suikei (1931–1947)' (An estimate of Chinese agricultural production, 1931–1947), *Tōkyō gakugei daigaku kiyō* (Bulletin of the Tokyo Gakugei University) 54 (January 2003): 146.

[58] Brandt and Sargent, 'China and U.S. silver purchases', p. 45; Myers, 'The World Depression', p. 257.

[59] Liu, '1927–1937 nian nongye shengchan', p. 102.

[60] Xu Daofu, *Zhongguo jindai nongye shengchan ji maoyi tongji ziliao* (Statistical materials on agricultural production and trade in modern China) (Shanghai: Renmin chubanshe, 1983), pp. 13–22.

with issues of demand, especially in the international market.[61] As in China, the protection offered by the depreciation of silver began to disappear from late 1931 (when the British and then the Japanese abandoned the gold standard) and particularly from 1933 (when the Americans abandoned gold and then embarked on their silver-purchase policy).[62] In Manchuria, the rise in the price of silver was further accentuated by a shortage of the metal in the region. Between 1931 and 1934 the Manchurian silver *yuan* increased in value from 0.43 to 1.10 Japanese yen. This began to cause serious problems for the economy, particularly in the form of falling agricultural prices.[63] Japanese sources report a 45% fall in soybean prices between July 1933 and March 1934, when they fell below 3 *yuan* per 100 catties, the lowest since 1915, and a level that made it impossible for many farmers to produce at a profit. However, partly because of the poor harvest, prices did stabilise after that.[64]

Moreover, while agricultural exports had earlier enjoyed rail freight charges made relatively cheaper by the fall in silver, they now lost this advantage, thus further restricting the market.[65] Despite price cutting, external demand was so weak that in 1933 soybean exports turned sharply downwards. The farm population, especially in north Manchuria, responded to falling prices and declining markets by reducing the sown acreage (in south Manchuria the area under cultivation in 1934 was as much as 95% of that in 1931, in the north only 79%), and by switching acreage from cash crops dependent on the market to subsistence crops.[66] A contemporary source argued that 'grain necessary for local consumption' was less severely hit than beans and wheat, highlighting the importance of low export prices, and

[61] SMR, *Minami Manshū Tetsudō Kabushiki Kaisha daisanji jūnenshi* (The third ten years of the SMR) (Dalian: SMR, 1938), pp. 516–7.

[62] For a major study of the deflation and the impact of the American silver policy see Richard C. K. Burdekin, "US Pressure on China's Currency: Milton Friedman and the Silver Episode Revisited", *Claremont Colleges Working Papers in Economics*, 2005–07.

[63] *Japan-Manchoukuo Year Book*, 1936, p. 716 and 1937, p. 762; MKN, 1935, p. 562; 'Ginka yakutō to Manshūkoku heisei no kiki', p. 4.

[64] *Japan-Manchoukuo Year Book*, 1935, p. 713; Nakanishi Tsutomu, 'Manshū keizai no genkyō' (The present situation of the Manchurian economy), MCG 15.7 (July 1935): 189.

[65] SMR, *Fifth Report*, p. 80.

[66] N. Fedosseieff, 'Grain Production in 1935', *Manchurian Economic Review* 1 (1 January 1936): 15; Nakanishi, 'Manshū keizai no genkyō', p. 168.

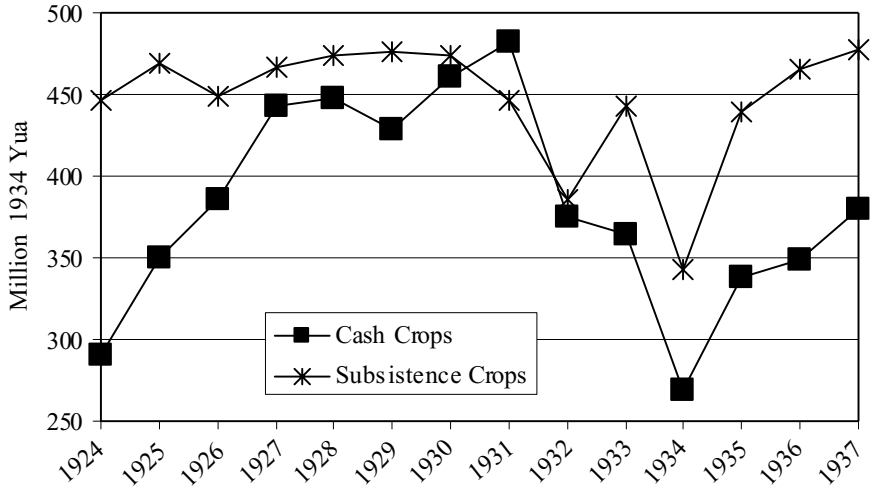

Figure 4. Cash and Subsistence Crop Outout, 1924-1937.
Note: Cash crops—soybeans and wheat; subsistence crops—gaoliang, millet and maize.
Source: Yamamoto, '*Manshūkoku' keizaishi kenkyū*, pp. 98–9.

Figure 4 shows that there was a much sharper—and continuous—decline in the output of cash crops than of subsistence crops.[67]

Nevertheless, non-economic shocks were even more important. A later Japanese study located the origins of the agricultural crisis partly in the political and military chaos following the Japanese invasion.[68] In the immediate aftermath, agriculture suffered from the effects of Chinese resistance ('bandits' in Japanese sources), interruptions to transport, and interference with the normal disbursement of advances by the financial sector during September.[69] In the longer term, the population of, for example, villages along the CER's eastern section was driven away, while the previous financial system for supporting agriculture and the marketing networks through which Chinese farmers disposed of their crops was dismantled.[70] Even the more positive aspects of the Japanese presence had deleterious consequences. The demands of the urban and railway construction

[67] Fedosseieff, 'Grain Production in 1935', p. 15.
[68] Ōgami Matsuhiro, 'Manshū nōgyō kyōkō no gendankai to nōson jittai chōsa' (An investigation of the real rural situation and the present stage of the Manchurian agricultural crisis), MH 9.3 (20 July 1935): 15.
[69] Naimushō, Shokusanka, *Jikyoku to Manshū zaikai* (The Manchurian financial world in the current situation) (Unpublished, 1931), p. 18.
[70] Jones, *Manchuria since 1931*, p. 173.

programme reduced the labour supply to agriculture as migration from north China declined.[71]

Disruption in the wake of the Japanese invasion was most serious in the north, where its timing disrupted the harvest and reduced its quality, and the subsequent increase in banditry meant that peasants did not risk taking their goods to market, but buried their soybeans and sorghum in the ground.[72] There was also serious disruption of transport, not only of railways like the Qiqihar-Keshan line, but even of long-distance horse and cart transport.[73] Figures for individual railway stations in north Manchuria show sharp drops in shipments: at Yalu station, west of Qiqihar, freight shipments fell by 45% in 1931 and again by 60% in 1932.[74]

In a still mainly agricultural society, however, climate remained crucial and the sharp falls in GDP and agricultural production in 1932 and 1934 can be traced primarily to natural disasters, especially major floods in both years. The year 1932 saw heavy rainfall and serious flooding across much of north Manchuria. Heilongjiang was worst affected with rainfall in Harbin in August the highest on record (going back to 1909) at over 500 mm, and that in Qiqihar in July over three times the average. Further south the situation was less extreme, with rainfall at Kaiyuan, Taonan and Dunhua ranging up to 50% over average.[75] The heavy rains led to 29 counties in Manchuria reporting flooding, not markedly more than the previous two years, but very many more than the years before that or than 1933. In all, 1.9 million hectares in Heilongjiang were affected, and the fields were

[71] MKN, 1934, p. 307; Iizuka Yasushi and Kazama Hideto, 'Nōgyō shigen no shūdatsu' (The robbery of agricultural resources), in Asada Kyōji and Kobayashi Hideo (eds), *Nihon teikokushugi no Manshū shihai* (Japanese imperialism and the control of Manchuria) (Tokyo: Jichōsha, 1986), p. 433.

[72] Yokohama shōkin ginkō, Tōdoriseki, Chōsaka, *Sei-Koku, Shi-Tō, Tō-Ko tetsuro ensen keizai jijō* (Economic situation along the Qiqihar-Keshan, Sipingjie-Taonan and Taonan-Ang'angxi railway lines) (*Chōsa hōkoku* 86, December 1932) (Yokohama: Yokohama Specie Bank, 1932), pp. 32–3, 43.

[73] Ibid, p. 10.

[74] SMR, Keizai chōsakai, *Manshū ippan keizai chōsa hōkokusho, zoku daiyon* (Economic survey of Manchuria, second series, no. 4) (Dalian: SMR, Keizai chōsakai, 1935), pp. 394, 421.

[75] Harubin seiri suisai zengo iinkai, *Jinshin Harubin suisai kijitsu* (The 1932 floods in Harbin) (Harbin: Harubin tokubetsu shi kōsho, 1934), pp. 8–9; SMR, Chihōbu, Nōmuka, *Daisanji Manshū nōgyō kishō hōkoku* (Third report on the climate for Manchurian agriculture) (Dalian: SMR., 1936), pp. 43, 50, 95, 103.

said to have turned into a sea, while refugee numbers were estimated at between 700,000 and 1.8 million.[76]

Flooding in turn reduced agricultural production—by 25% in the north, though only 10% in the south.[77] In an analysis of the impact of the floods on agriculture, the SMR office in Harbin conservatively estimated that 9.1% of sown acreage in north Manchuria had been flooded, and predicted a similar shortfall in the harvest. The worst hit areas were the agricultural heartland along the Songhuajiang and between the Qiqihar-Keshan and Hulan-Hailun railways north of Harbin, where losses approached 20%.[78] Another report spoke of sharp reductions in the quantity and quality of the wheat and soybean harvests. Some areas in northern Jilin around the Lalin and Hulan rivers lost the entire crop. Total losses amounted to 1.4 million tons (valued at over 81 million *yuan*), equivalent to 13% of the Manchurian grain harvest, slightly over half in Jilin and the rest in Heilongjiang. According to these figures, the floods directly accounted for about two-thirds of the decline in agricultural production in north Manchuria in 1932, and around 45% of the decline across Manchuria. The flow-on effects reduced the income of the SMR and the export trade in bean products, while the floods also affected urban areas, inundating the commercial district of Harbin. There were also large livestock losses: in all 281,000 head were lost along the Songhuajiang, including 56,000 cattle, 114,000 horses, and 23,000 mules, to a total value of around 14 million *yuan*.[79]

Further very serious climatic shocks (low temperatures and excess rainfall, flooded rivers and locust infestations) in 1934 were seen by Japanese observers as the cause of the steep decline in agricultural production that year. In fact however, flood losses were less than in 1932, and a wider range of problems affected the harvest. The effects of the floods were exacerbated by the aftermath of the earlier disasters,

[76] Xia Mingfang, *Minguo shiqi ziran zaihai yu xiangcun shehui* (Village society and natural disasters in the Republican period) (Beijing: Zhonghua shuju, 2000), pp. 377–8, 390; *Zhongguo nongye quanshu: Heilongjiang juan* (Compendium of Chinese agriculture: Heilongjiang) (Beijing: Zhongguo nongye chubanshe, 1999), p. 51; 'Hoku-Man suisai no eikyō' (The impact of the north Manchurian floods), MH 3.8 (20 August 1932): 22; 'Hoku Man chihō ni okeru daikōzui to sono eikyō' (The effects of the floods in north Manchuria), DSG 205 (September 1932): 24.

[77] *Manshū keizai tōkei kihō* (Manchurian economic statistics quarterly), 3 (August 1943): 22–3.

[78] 'Hoku-Man suisai no eikyō', p. 22; MKN, 1933, p. 239; much higher figures are given in Harubin seiri suisai zengo iinkai, *Jinshin Harubin suisai*, p. 218.

[79] 'Hoku Man chihō', pp. 24–6, 27–30, 32.

which had left the farm population without the means to invest in and fully process the harvest. Moreover, recovery from the dispersal of the population was by no means complete; labour was being transferred to industry; and there was the ever present problem of banditry.[80]

The flooding exhibited a somewhat different geographical pattern from 1932. Although the problems again tended to be concentrated on the border between north and south Manchuria, the balance this time was further to the south. Rainfall in July 1934 was higher than in the earlier flood year of 1932 in Dunhua (Jilin) and Taonan (Jilin), about the same in Kaiyuan (Liaoning) but substantially lower in Qiqihar (Heilongjiang). July temperatures were more than one degree below the average in all four centres.[81] Similarly, while much of north Manchuria was flooded, with the scene from Harbin being described as 'a great sea, over which billows raged; it is remindful of the ocean', the 380,000 hectares affected in Heilongjiang were nevertheless much less than in 1932.[82] On the other hand, areas further to the south were worse affected than in 1932. Jilin suffered flooding over 80% of its cultivated area, with large numbers of refugees; 32 xian were affected. In Liaoning, 7.6 million mou in 50 counties were flooded.[83] In the worst hit Jiandao region around Tumen in eastern Manchuria, disaster followed disaster: drought early in the year, low temperatures during the growing season and first frosts eight days earlier than normal all prevented normal growth and led to the failure of the crops. As a result, harvests in Jiandao and along the Shenyang-Jilin and Changchun-Tumen railways were reduced by 40–50%.[84] Some Japanese observers accounted for the resulting suffering by pointing

[80] 'Tō-Man nōson no kiki to Chō Shin naikaku no taisaku hihan' (A critique of the policies of the Zhang Xin cabinet towards the East Manchurian rural crisis), MH 8.24 (15 June 1935): 5; 'Hoku-Man tokusambutsu no genshū mondai' (The decline in the harvest of export products in north Manchuria), MH 6.15 (14 April 1934): 5.

[81] Jie, *Wei Manzhouguo shi xinbian*, p. 333; Iizuka and Kazama, 'Nōgyō shigen', p. 446; SMR, Chihōbu, Nōmuka, *Daisanji Manshū nōgyō kishō hōkoku*,, pp. 43, 50, 95, 103.

[82] 'Kōryō no genshū to sōba no kōtō' (The decline in the gaoliang harvest and the rise in prices), DSG 233 (January 1935): 108; *The Manchurian Month*, 1 August 1934, p.2; *Zhongguo nongye quanshu: Heilongjiang juan*, p. 51.

[83] *Jilin sheng zhi, disanshiwu, qixiang zhi* (Gazetteer of Jilin province, no. 35: Climate) (Changchun: Renmin chubanshe, 1996), p. 379; *Liaoning sheng zhi: Qixiang zhi* (Gazetteer of Liaoning province: climate) (Shenyang Liaoning minzu chubanshe, 2002), p. 369.

[84] MKN, 1935, p. 334; Kikue Kaoru, 'Tō-Man nōson kyōsaku no taisaku hihan' (A critique of policies to deal with the bad harvests in eastern Manchuria), MH 8.5 (2 February 1935): 11–2.

to the very high level of commercialisation in the area, much higher than in other parts of south Manchuria.[85]

Crop losses in the three provinces amounted to 35 million *yuan*; this is a substantial figure, amounting to around 5% of total grain production, but it was only half of the 1932 losses. As the climate data might suggest, the drop was greater in south than in north Manchuria and particularly heavy in the cash crops of soybeans (down 35%) and wheat (down almost 55%).[86]

Farm Incomes

Debates over trends in agricultural production are matched by those over farm incomes. On the one hand, the impact of the decline in the bean trade provides evidence to support Rawski's contention that

> It is in the highly commercial farming regions, and only in those areas, that the effect of the depression in China may be compared with the hardships experienced by both urban and rural residents in the major industrial nations.[87]

Likewise, an SMR researcher argued that the loss of the profitable opportunities generated through soybeans intensified the impoverishment of the Manchurian peasantry.[88]

A later Chinese study suggests that income per acre from soybeans fell by 74% between 1924 and 1933.[89] Because of its greater dependence on soybean exports, the situation was worst in Heilongjiang, where the British Consul reported 'serious distress' among the population because of the fall in bean prices.[90] Herbert Bix cites a Japanese report to the effect that peasant incomes there fell from 170 *yuan* in 1927 to 81 *yuan* in 1931 and 57 *yuan* in 1933 as a result of the decline of the industry.[91]

[85] MKN, 1935, p. 334.

[86] *Manshū keizai tōkei kihō*, 3 (August 1943): 22–3; 'Kōtoku gannendo zen-Man suisai jōkyō' (The Manchurian floods in 1934), MCG 15.3 (March 1935): 133.

[87] Rawski, *Economic Growth*, p. 179.

[88] Nakanishi, 'Manshū keizai no genkyō', p. 168.

[89] Li, *Zhongguo Dongbei nongye shi*, p. 537.

[90] 'Report on the Kwantung Leased Territory and on Japanese Activities in Manchuria during the Year 1933', in *Japan & Dependencies*, vol. 13, pp. 485–6.

[91] Herbert Bix, 'Japanese Imperialism and the Manchurian Economy, 1900–1931', *China Quarterly* 51 (1972): 430. These figures originate in MKN, 1935, p. 304. The figures use *yuan*, but it is not clear how they are generated.

Myers, however, argues that the effects of falling commodity prices on farmers in commercialised regions were mitigated by the fact that factor prices, and thus costs of production, fell along with product prices,[92] and there is some reason to be sceptical about the magnitude of the decline suggested in the sources above. If one takes a farmer who grew soybeans and sold them to buy food grains, the fact that the prices of food crops fell by at least as much as soybeans means that, at least in this respect, the family would not be worse off. This is not, however, to deny that farm families dependent on the soybean trade did experience difficulties in the mid 1930s.

On the other hand, events such as the Manchurian floods lend support to Myers' conclusion that only where farmers were affected by 'random shocks' such as floods or bandits, in addition to economic depression, were incomes seriously affected. It was when poor harvests, as in the area around Tumen near the Korean border, exacerbated the falls in price that the poorest households in society descended into debt slavery.[93]

In any case, it would appear that the collapse in production fell short of creating widespread famine conditions, and rural distress is best described in economic terms. One might have expected a decline in food production of the magnitude experienced in 1934 (and 1933 was not a peak year) to result in widespread famine: a similar decline certainly did so across China in 1958–60, when grain production fell by 28%. Similarly, a 24% drop in rice production in Sichuan in 1936 (not matched by all other crops) led to a widely reported and catastrophic famine.[94]

There were some signs of famine conditions in Manchuria in 1934. The SMR estimated that production fell short of demand not just in the urbanised areas south of Shenyang and around Harbin, as one might expect, but also in Jiandao in the east, along the Jilin-Changchun railway and in some areas of north Manchuria.[95] Contemporary data suggest that 70% and 56% respectively of the populations of Shulan and Panshi Counties (both east of Changchun) were driven into destitution, along with smaller percentages in many other areas. Conditions close to famine existed around Tumen, and the Imperial

[92] Myers, 'The World Depression', p. 269.
[93] MKN, 1935, p. 334.
[94] Chris Bramall, *Living Standards in Sichuan, 1931–1978* (London: Contemporary China Institute, School of Oriental and African Studies, University of London, 1989), pp. 22–3, 46; Wright, 'Distant Thunder', p. 732.
[95] Nakanishi, 'Manshū keizai no genkyō', pp. 176–7.

State attempted to re-establish charitable granaries and organised relief in the form of loans first of grain and then of money, while looking in the longer term to the promotion of cotton as an alternative crop.[96]

Nevertheless across the region as a whole there was still a small surplus of grain over and above consumption. British consular reports do not use the word 'famine' or even point to a sharp deterioration of conditions in 1934.[97] Nor is there any sign in the population figures of a severe famine. There must remain some question about the severity of the impact of developments in the 1930s on peasant livelihood.

A Stuttering Recovery

Agriculture began to recover from 1935, and especially from 1936. Again this can be attributed both to more favourable climatic conditions and to changes in the economic environment. The rising value of the silver currency and the consequent decline in prices was halted by the adoption of managed currencies both in China and in Manchuria, where the Manchukuo government brought its currency to parity with the yen, formally pegging it to that currency in November 1935.[98]

Partly as a result of this, prices increased to some extent in 1935 and more strongly in 1936, reflecting growth in export demand and leading, at least in the eyes of contemporary observers, to a substantial improvement in the rural economy and farm incomes. An SMR survey of farms in north Manchuria showed that the average net income of farmers almost doubled between 1934 and 1935, with improvements for all sizes of farm, in all districts, and for all independent farms, though tenant farms suffered a marginal decrease.[99] By 1937 the American Consul-general reported: 'In general, agricultural prices are higher than in many years ... Higher rather than lower prices seem probable in the future ... Rural purchasing power should be much

[96] MKN, 1935, p. 336.

[97] Nakanishi, 'Manshū keizai no genkyō', pp. 176–8; 'Annual Report on Manchukuo for 1934', p. 269.

[98] Jones, *Manchuria Since 1931*, pp. 125–8; Yasutomi, *'Manshūkoku' no kinyū*, p. 56; *Japan-Manchoukuo Year Book*, 1936, p. 716 gives a slightly different chronology.

[99] T. Tanaka, 'Economic situation in 1936', *Manchurian Economic Review* 22 (15 November 1936): 5; 'Financial Condition of the Agricultural Population of North Manchuria in 1935', *Contemporary Manchuria* 1.2 (July 1937): 73–81.

higher than last year. This should cause an increase in practically all lines of business'.[100] Output, however, proved rather inelastic, and even the large increases both in cultivated acreage and in agricultural production in 1937 left levels clearly below those of the late 1920s.[101] Manchuria's agriculture did not recover the vibrancy it had enjoyed before 1929 at least until after stability was restored in the 1950s.

Industry—From Decline to Keynesian Recovery

The final argument in this paper focuses on the (possibly unintentionally) Keynesian role of Japanese investment in bringing about a boom in Manchurian industry and construction from 1933–34. This boom followed a relatively mild downturn in the early 1930s, and involved a substantial amount of structural change, within industry, within GDP and in the geographical distribution of industry.

The downturn in Manchurian industry was both earlier and less dramatic than that in agriculture. According to the author's estimates, industrial production fell slightly in 1931 and then a little more in 1932, when it was just over 4% below the 1930 level.[102] As with agriculture, this resulted from a range of factors, with the Depression possibly playing a larger role. Falling (gold-based) prices reduced the value, though not the volume, of industrial output in Dalian, with an especially sharp fall in the first half of 1932.[103] These falling prices squeezed profits, especially for industrial enterprises using the now more expensive imported or Japanese materials: for example, the Tongyihe Ironworks in Harbin was forced into a loss-making situation because of the increased cost of the iron it bought from the Sino-Japanese Benxihu Company.[104] The impact on output volume was

[100] American Consulate-General in Harbin to American Consulate-General in Shanghai, 'Trade Conditions in North Manchuria, During January-February 1937', 1 March 1937, in Second Historical Archives, Nanjing, 422(4)/2661.

[101] Yamamoto, '*Manshūkoku' keizai shi*, pp. 98–9.

[102] Sun's figures, however, show a very much sharper decline: *Economic Development*, pp. 94–6.

[103] 'Kin kaikin to Dairen keizaikai', p. 14; Dairen shōkō kaigisho, *Shōwa gonen Dairen keizai nenshi*, p. 174; 'Kamihanki ni okeru Dairen kōgyō seisan jōkyō' (Dalian's industrial production in the first half of the year), DSG 193 (September 1931): 35; 'Shōwa rokunen Dairen kōgyō seisan jōkyō' (Dalian's industrial production in 1931), DSG 199 (March 1932): 41.

[104] Yun Feng, 'Harbin guohuo gongchang diaocha' (Investigation of Chinese-owned factories in Harbin), ZB 2.4 (1 March 1931): 50.

less, but the decline in transport as a result of falling trade led to a contraction in construction and related industries, with the demand for iron and steel products falling by over a half between 1929 and 1931, before steeply increasing from 1933.[105]

A second major factor behind the downturn in Manchurian industry was the Japanese invasion, in the wake of which nearly all factories closed, either because, like the bean mills, they could not access raw materials, or because, as with the flour mills and glassworks, they could not sell their products.[106] Business in Jilin ground to a halt: apart from some small trade in daily necessities, firms in other lines, while nominally open for operations, were in fact as good as shut.[107] Continuing Chinese resistance also constrained industrial recovery in the first half of 1932: in the twelve months following the invasion, there were 329 attacks on the SMR, leading to the suspension of night trains in August 1932.[108] Nevertheless the British Consul concluded that 'conditions throughout Manchuria are vastly better than they were at the close of 1931'.[109]

The brief downturn was ended, particularly in south Manchuria, by increased Japanese investment following their take-over of the region. For most of the first half of the century the fate of the Manchurian economy was closely tied to that of Japan, where from late 1931 the government instituted policies that were Keynesian in effect and partly in intention. As a result Japan's economy began to recover and expand relatively rapidly from 1932.[110] Such policies, aimed more at preparation for war than economic reflation, were also implemented in Manchuria.

Manchurian industry and construction benefited from very substantial investment. Rawski estimates gross investment in the

[105] SMR, Chōsabu, *Tekkō kankei shiryō* (Materials on iron and steel) (Dalian: SMR, 1937), pp. 184, 217.

[106] Naimushō, *Jikyoku to Manshū zaikai*, pp. 39–40, 42.

[107] SS, 5 November 1931, p. 5.

[108] 'Shōwa shichinen Dairen kōgyō seisan jōkyō', p. 9; 'Report on the Kwantung Leased Territory and Japanese Activities in Manchuria for the year 1932', in *Japan & Dependencies*, vol. 13, p. 458.

[109] Ibid, p. 467.

[110] G. C. Allen, *A Short Economic History of Modern Japan* (London: George Allen & Unwin, 1962), pp. 136–43; Kozo Yamamura, 'Then Came the Great Depression: Japan's Interwar Years', in Herman van der Wee (ed), *The Great Depression Revisited: Essays on the Economics of the Thirties* (The Hague: Martinus Nijhoff, 1972), pp. 202–3; Kaoru Sugihara, 'Japan's Industrial Recovery, 1931–6', in Brown, *The Economies of Africa and Asia*, pp. 152–69.

modern sector alone in Manchuria, 1932–6, at just over 2 billion *yuan*. A substantial proportion of this—over 1 billion yen according to Yamamoto—came from Japan. Rawski's figures suggest a rate of gross modern sector investment in Manchuria of about 13%, while the figure for the rest of China was around 3%.[111] This investment quickly led to a 'state establishment boom',[112] generating rapid economic growth, high profits and structural change in some sectors of the Manchurian economy. Industrial output grew by an average of 24% per annum between 1932 and 1937, and as a result the modern sector—mining, factory production, construction and modern transport—increased its contribution to Manchuria's GDP from about 10% in the late 1920s to almost 20% in 1937.

Japanese investment and its beneficiaries were concentrated particularly in the construction and infrastructure sectors. Even in 1932, immediately after the establishment of Manchukuo, railway and other construction created favourable conditions for industries supplying building and other materials. Construction work increased fourfold in value in 1933, and a further 50% in 1934, labour employed in construction about fourfold between 1932 and 1934.[113] Transportation was upgraded and expanded, electricity production developed, and preparations, in the forms both of prospecting and the establishment of companies, made to develop mineral resources.[114] By 1934 press reports described the Manchurian economy as 'exceptionally lively' and enjoying a 'bustling boom', as the construction sector was also beginning to bring prosperity to industries such as iron making and cement.[115]

Substantial investments were also made in heavy industry, which was core to Japan's long term aims, though it was often a matter

[111] Rawski, *Economic Growth*, p. 245; Yamamoto Yūzō, 'Manshūkoku o meruru taigai keizai kankei no tenkai' (The development of Manchukuo's external economic relations), in Yamamoto Yūzō (ed), *Manshūkoku no kenkyū* (Studies on Manchukuo) (Tokyo: Ryokuin shobo, 1995), p. 215.

[112] Nakanishi Tsutomu, 'Manshū toshi sangyō no genkyō' (The current state of the urban economy in Manchuria), MCG 15.8 (August 1935): 191.

[113] 'Shōwa shichinendo Dairen kannai kigyō seiseki', p. 14; SMR, *Fifth Report*, p. 50; Nakanishi, 'Manshū toshi sangyō', p. 191.

[114] E. B. Schumpeter, 'Japan, Korea and Manchukuo, 1936–1940', in E. B. Schumpeter (ed), *The Industrialization of Japan and Manchukuo, 1930–1940: Population, Raw Materials and Industry* (New York: Macmillan, 1940), p. 376.

[115] *The Manchurian Month*, 1 March 1935, p. 17; *Manshū nenkan* (Dalian: Manshū nichinichi shimbunsha, annual), 1935, p. 232; 'Manshū keiki ni somuku dochaku kōgyō' (Indigenous industries against the background of the Manchurian boom), MH 6.24 (23 June 1934): 5–6.

of reopening and developing resources seized from the Chinese. For example, in coal mining, the SMR and the new Japanese-owned Manchuria Coal Mining Company took over many existing Chinese enterprises: the output of the Jiaohe mine (Jilin) increased from 19,000 tons in 1932 to over 200,000 in 1936, while Hegang (Heilongjiang) was expanded to produce half a million tons on the eve of war.[116] Thus, the balance of investment and growth was concentrated in industries involved in construction or preparations for war and the structure of industry shifted substantially in their direction.[117] The contribution to total industrial output of industries and utilities linked to metals and construction rose from just over 40% at the beginning of the 1930s to over 60% in 1936.[118] The obverse of this was the relative decline of consumer industries, especially soybean processing, which had been by far the most important industry and suffered, as outlined above, a steep and irreversible decline, from 20% of the total in 1932 to under 5% by the eve of war.

Despite this, some consumer goods industries experienced growth: cotton yarn (the modern textile industries were mainly, though not exclusively, in Japanese hands) grew rapidly, while some industries under Chinese control also did reasonably well during the pre-1937 period. Even though Manchuria was suffering from its currency's link to silver until early 1935, growth there was nevertheless stronger than in China, for at least three reasons. First, there were linkage effects from the Japanese programme of industrialisation and railway construction. Second, the closure of Manchurian market to Chinese handicraft products, which was a major contributing cause to the difficulties of China's industries and handicrafts, encouraged the development of import-substituting Manchurian industries behind a protective tariff wall.[119] Third, at the end of the period, the recovery of the staple trade in 1936 benefited not only the north Manchuria flour industry but even the iron and chemical industries.[120]

Almost as striking as the change in industrial structure was a geographical shift in the distribution of Manchurian industry, with the deindustrialisation of the north. In the late 1920s, rapid industrial growth in the north encompassed the development both of bean and

[116] *Zhongguo jindai meikuang shi* (History of the modern Chinese coal industry) (Beijing: Meitan gongye chubanshe, 1990), pp. 370, 373.
[117] Seki, 'Manshū keizai no genkaidan', p. 21.
[118] I.e. Iron, steel, machinery, bricks, tiles, cement, lime, glass, electricity.
[119] Xu and Wu, *Zhongguo zibenzhuyi*, pp. 408–14.
[120] Tanaka, 'Economic situation in 1936', p. 5.

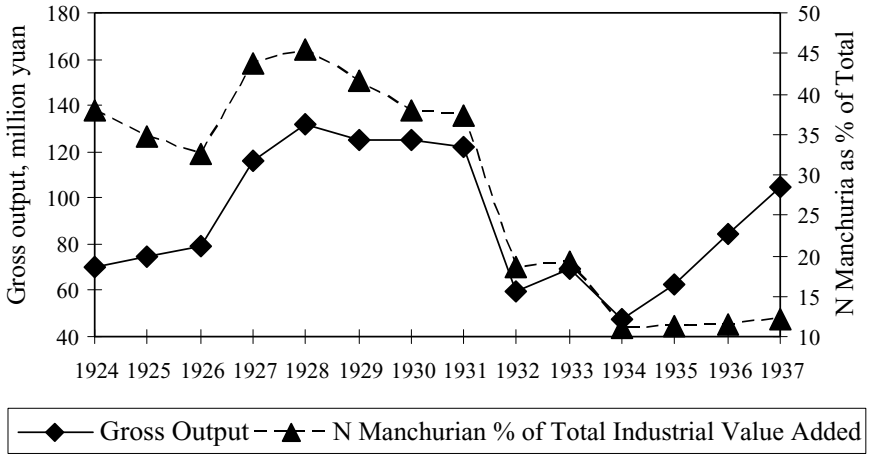

Figure 5. North Manchurian Industry in the Manchurian Industrial Sector, 1924–1937.
Sources: Author's estimates; Sun, *Economic Development*, p. 99.

flour processing close to agricultural districts that produced most of the beans and wheat, and of extractive industries such as coal mining. However this trend was very sharply reversed in the early 1930s, and both quantitative and qualitative evidence shows that industry in the north suffered much more severely, and much more protractedly, than the south. As shown in Figure 5, industrial production there declined sharply and by 1934 was only one-third the level of 1928. Its share of total production plummeted from over 30% around 1930 to under half that level four years later.

Similar structural changes took place in the north as in the region as a whole. Consumer goods industries declined. As early as 1930, the flour, bread, sugar, alcohol, tobacco, sock-making and shoe-making industries in Harbin universally experienced sharp reductions in output and financial losses, while the indigenous Chinese textile industry was depressed for most of the decade.[121] Most importantly the bean processing industries declined both absolutely and relatively. In 1937, beancake and bean oil production in north Manchuria was little more than one-fifth the level of 1931, and the proportion of marketed soybeans processed in Harbin, the region's main centre, fell from just over 20% in 1926 to under 10% in 1935.[122] This

[121] Ji, 'Jiji kewei zhi Harbin jingji jie', p. 41; 'Manshū keiki ni somuku dochaku kōgyō', p. 6.
[122] Ōshima, 'Yufusa kōgyō', p. 154.

decline was permanent. It is true that there were some slight signs of recovery in the mid 1930s: the British Consul reported 'an increase in the prosperity of the population in general [in 1936]... due to an improved world demand for the agricultural products of north Manchuria'. However, he also reported that soybean prices had still not reached their pre-Depression level, and the figures make clear that this industry remained in recession.[123]

In partial contrast, flour production grew strongly in the mid 1930s, after falling by over 50% between 1929 and 1934. It was helped in this by substantial Japanese investment as well as by the policy of self-sufficiency and limitations on imports, creating the room for expansion of sales in south Manchuria.[124] Likewise, coal mining, which suffered at least as drastic a decline from 1931 as did the consumer industries, later posted a stronger recovery. Immediately following the invasion, major coal mines such as Hegang in Heilongjiang and Muleng in Jilin saw their production cut by two-thirds or three-quarters, but by 1936 output had recovered, with the aid of substantial Japanese investment, to pass the previous 1929 peak.[125] This resulted in a shift in the structure of production towards heavy industry. Nevertheless, the British consul reported general pessimism over the direction of the economy once the construction boom had ended.[126]

Conclusion

The above analysis leads to several conclusions relating to the histories of China's economy and the World Depression. First, their use of a silver currency was crucial in the timing and nature of the transmission of the World Depression to China and Manchuria. The situation in Manchuria was particularly complex because of the existence of a substantial (Japanese-owned) sector using mainly gold currency. The tensions generated by changes in the relative values of silver and gold

[123] 'Report on Economic Conditions in Manchuria as at the end of 1936', in *Japan & Dependencies*, vol. 15, pp. 344, 346.

[124] Manshū jijō annaisho, *Manshū kōgyō gaiyō* (Manchurian industry) (Xinjing: Manshū jijō annaisho, 1940), p. 12; Harubin shōkō kōkai, *Harubin keizai gaikan*, p. 69; Tada Isamu, 'Hoku-Man no komugi oyobi ni seifungyō ni tsuite' (On the wheat and flour industries in north Manchuria), *[Yokohama shōkin ginkō] chōsa hōkoku*, No. 100 (Yokohama: Yokohama Specie Bank, 1936), p. 43.

[125] *Zhongguo jindai meikuang shi*, appendix table 2.

[126] 'Report on Economic Conditions in Manchuria as at the end of 1936', pp. 342–3.

between 1929 and 1931 were a contributing factor to the Japanese occupation of Manchuria.

Second, the impact of the Depression contributed to major changes in the structure of Manchuria's economy. Cyclical effects, linked to the long-term changes in the demand for soybeans, led to a steep decline in agriculture and related industries such as the bean mills in the mid 1930s. On the other hand, the reflationary Japanese programme of infrastructural investment (itself partly reflecting the response of the Japanese government to the Depression) following the establishment of the puppet regime of Manchukuo led to a rapid recovery in construction and related industries. These trends led to a major shift in Manchuria's economic structure towards industry and the modern sector.

Third, as in other countries, there were strong regional differences in the impact of the Depression. North Manchuria was worst affected, with serious long-term damage done to its economy by all three major problems affecting the region's economy. The Depression-linked decline of the soybean trade had most impact on the north, which was more dependent on the trade; the devastating floods were worst in north Manchuria; and the Japanese invasion (and subsequent Japanese preferential policies for the SMR and for Dalian) led to a transfer of economic activities from north to south Manchuria. On the other hand, south Manchuria, while certainly affected by all three factors to some extent, had greater stability in output and incomes.

Most importantly, non-economic shocks remained the most powerful negative influence on economic production. The aftermath of the Japanese invasion caused considerable disruption for both agriculture and industry. Even more crucially, however, my analysis of this most commercialised area of China supports the contention that climatic shocks had a greater macro effect on developing countries than did the Depression. The world economy had a significant impact on Manchuria, but the most important influences were still internal.

Appendix: Data on Manchurian GDP and Industrial Production

The series used in this study is mainly developed on the basis of the data and methodology in Chao's pioneering work, *Economic Development*. I use this rather than the more recent estimates in Yamamoto, '*Manshūkoku*' *keizai shi*, pp. 258–64, because Chao's

figures cover the whole period in which I am interested and he uses a methodology that can be extrapolated to other years. Space considerations mean that I can only outline here the main features of my data and methodology. Details are on my website, accessible through http://www.shef.ac.uk/seas/staff/chinese/wright.html.

My estimates are fuller and, I believe, more accurate than Chao's, though much of the methodology is similar. The trends (with which the paper is primarily concerned) generated in my series are probably more reliable than the absolute level of GDP, as they almost exclusively rely directly or indirectly on the following 'hard' components of the series, which make up about 40% of total GDP:

- The figures for grain production (the largest single component). While there are some variations in these figures, those for the 1930s in particular are fairly consistent.
- The figures for railway transport. These are very reliable. Although the SMR financial year was not identical to the calendar year, it is unlikely that this would have a major effect on the magnitudes or the trends.
- Most of the figures for lumber and for mining, especially for coal, the largest component.
- Some of the components of the figure for industry. The core of the industry estimates is probably fairly reliable, though there are some unexplained fluctuations in those figures. The extrapolation of those figures to cover the whole of Manchuria is less reliable.

Below I describe the data and methodologies used to estimate value added in each sector.

Agriculture +

The grain series is the most important component of the GDP figures, first because it contributes the largest proportion to the total and second because the fluctuations in GDP that this paper is concerned with originate to a considerable extent, though by no means exclusively, in the series for grain. I rely on the recent work by the Hitotsubashi group, as summarised in Yamamoto, '*Manshūkoku' keizai shi* , pp. 98–9.

For industrial crops, my series for 1931–37 also uses figures from the Hitotsubashi project, from Quan Zhenan, 'Senzen tōhoku chi-iki no nōgyō seisan no suikei: 1931–44 nen' (An estimate of agricultural

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production in North-east China before the war, 1931–1944), pp. 120–45 in *Chūgoku no kindai keizai seichō to kōzō henka ni kansuru sūryōteki sōgōteki bunseki* (A quantitative and comrehensive analysis of China's economic growth and structural change) (Tokyo: Hitotsubashi University, unpublished research report, 2004), p. 139. For 1924–30 it assumes that the (admittedly uneven) linear trend of increase in the ratio of industrial crops to grain crops was the same in 1924–30 as it was in 1930–37. Thus it builds in some increase in that ratio, though less than that suggested by Chao.

For other relatively minor elements of agricultural production (broadly defined), I supplement Chao's data and methodology with data from *Kantō kyoku tōkei sanjunenshi* (Thirty years of statistics of the Kwantung Administration) (Lűshun: Kantō kyoku, 1937), p. 272 (quantity of fruit), SMR, Chōsaka, *Tōsanshō nōsanbutsu shūkakudaka yosō* (Estimate of Manchurian harvest) (Dalian: SMR, annual), 1926, p. 50 and 1927, p. 36 (livestock), Manshikai, *Manshū kaihatsu*, vol. 1, pp. 821, 825, 837 (livestock, lumber and fisheries), and Quan, 'Senzen tōhoku', p. 145 (fisheries).

Industry +

Mining: I follow Chao, using his figures for prices and value added ratios linked to output volume figures. Chao's data is supplemented with data from SMR, Keizai chōsakai, *Manshū keizai tōkei zuhyō* (Tables of Manchurian economic statistics) (Dalian: SMR 1934), pp. 89, 97; Yamamoto, '*Manshūkoku' keizai shi*, Table 3–13; MKN, 1934, p. 375 and 1938, statistics, p. 1; *Zhongguo kuangye jiyao* (General statement of the Chinese mining industry) (Beijing: Zhongyang dizhi diaocha suo, various years), no. 5, p. 213, no. 7, pp. 137–8; *Japan Manchoukuo Year Book*, 1940, p. 1016.

Industry: I follow Chao's basic methodology of generating a *trend* from the figures for Kwantung and the SMR zone in *Kantō kyoku tōkei sanjunenshi* and linking this to a figure for total industrial output in 1934 in *Manshū kōjō tōkei, Shōwa kyūnen* (Statistics of Manchurian factories, 1934) (Dalian: Kantō kyoku, 1937). My methodology differs from Chao's in the following ways:

- Most importantly, given the difference in trends in south and north Manchuria (a problem foreseen by Chao), I extract the figures for the most important industries (bean oil, beancake and flour) in

north Manchuria and generate separate series for south (using the above methodology) and north Manchuria, and link these to figures for total output in *Manshū kōjō tōkei*.

- In order to minimise reliance on rather highly aggregated price indices, I use, where possible (and it is possible for a substantial part of output), the quantity series rather than the value series for individual industrial products (linking these to the 1934 value of output).
- *Kantō kyoku tōkei sanjunenshi* gives figures only up to 1935. I supplement these with *Kantō kyoku tōkei sho* (Statistics of the Kwantung Administration) (Dalian and Xinjing: Kantō kyoku, annual), 1936 and 1937.
- Where the series in *Kantō kyoku tōkei sanjunenshi* do not tally with other reliable sources or are internally inconsistent, I make some minor corrections. Thus I make corrections for iron and steel, machinery, cement, sugar, chemical fertiliser, ice and electricity. Data is taken from *Japan-Manchoukuo Year Book*, 1938, 834 and 1939, 803, 816, Yamamoto, '*Manshūkoku' keizai shi*, Table 3–13, and Manshikai, *Manshū kaihatsu*, vol. 2, p. 537.

Small Workshops: There is a major discrepancy here in that Chao's total for small-scale industry is over ten times that in Yamamoto. Chao's total, which is based on employment figures, seems excessively high. It suggests small workshops (more or less equivalent to 'handicrafts') contributed between 7% and 10% of GDP (with a generally declining trend). But Liu and Yeh, *Economy*, p. 88, attribute only 7.4% of all-China GDP to handicrafts in 1933. Of this, close to half involved food products, and another sixth silk and cotton goods (Liu and Yeh, Ibid, pp. 512–3). But in Manchuria modern mills processed most of the soybeans and wheat that made up much of agricultural production, and in general Manchuria was an importer rather than an exporter of handicraft products. On the other hand, Yamamoto's figure, at well under 1%, seems to understate the likely share of handicrafts. It is difficult to come to a documented compromise, but a range of 3–5% might seem to be reasonable, possibly erring on the high side. This suggests an estimate of around 100 million 1934 *yuan*. A second question involves *trend*. Chao assumes that output was basically constant up to 1937. There must be some question about this assumption. On the one hand, there would be a case for assuming growth in line with population and/or GDP. On the other hand, it

might be reasonable to assume that there was some substitution effect whereby modern industry replaced small workshops. In the lack of any specific evidence, I assume output was constant at a figure of 100 million *yuan*.

Construction: I assume that construction activity varied 50% (basically the traditional sector) with population and 50% (basically the modern sector) with Rawski's (*Economic Growth in Prewar China*, p. 245) series for modern investment in Manchuria. Then I construct a series based on Chao's figure for 1934. This procedure generates a series broadly compatible with Chao's.

Services +

Modern Transportation: Figures for volume of railway transport are linked to the 1934 figure for railway revenue, taken from Chao, *Economic Development*, p. 95. Volume of railway transport 1929–1936 from MKN, 1937, p. 466. Other figures are taken from Manshikai, *Manshū kaihatsu*, vol. 1, p. 301 (SMR), and, SMR, *Manshū keizai tōkei zuhyō*, p. 203 (CER). Volume figures for the Chinese-owned railways up to 1928 are estimated from figures for tons and passengers carried in *Manshu keizai tōkei nempō* (Year book of Manchurian economic statistics) (Dalian: SMR, annual) 1934, p. 71. Water transport figures are mainly taken from SMR, Keizai chōsakai, *Manshū kōtsū tōkei shūsei* (Transport statistics of Manchuria) (Dalian: SMR, 1935), MKN, 1938, statistics, p. 12 and *Japan Manchoukuo Year Book*, 1936, p. 750.

Traditional Transport: In general, I use Chao's methodology.

Trade: I use Chao's methodology, but link his estimate for 1934 to an index for gross freight revenue over the whole period, rather than using labour figures for 1934–1937. Chao's 1934 estimate is, however, reached by multiplying a 1941 income figure by the ratio of 1934:1941 labour input.

Government and Professional Employees and Imputed Rents: Following Chao, I assume these two categories as 9% and 5.7% of GDP respectively.

The Problem of 1934

The dip in Manchurian GDP in 1934 resulting from a steep fall in agricultural production is an important part of the analysis in the

main paper. It must, however, be stated that there is some doubt about those figures:

- As outlined in the paper, one would have expected such a decline to lead to widespread famine, but this did not happen.
- Also one might have expected such a decline to have major flow-on effects in the rest of the economy, but again this does not appear to have been the case. This may partly be because of the methods of estimation used here, which for the service sector of the economy are heavily reliant on modern transport. However, for modern transport, the SMR reports for 1934–1935 showed much more concern with demand conditions in the world economy than with local supply.

Despite these doubts, I have not attempted to adjust the figures:

- Most importantly, there is no evidential basis for a different estimate of agricultural production. This is in contrast with, for example, 1926, where the sharp fall in agricultural production shown in some series is contradicted in others, and where one can surmise reasons why the low estimate might have been too low. But for 1934 there are no figures that could form the basis of an alternative estimate.
- Railway transport figures do show a substantial decline in shipments of the main agricultural products: on a seasonally adjusted basis, shipments into Dalian of the main subsistence crop, gaoliang, fell by two-thirds between December 1934 and December 1935 reflecting the 1934 harvest; soybeans fell less drastically (by about one-third) between autumn 1934 and the end of 1935. See various issues of *Manshū keizai tōkei nempō* (Year book of Manchurian economic statistics) (Dalian: Dairen shōkō kaigishō, annual), various years.
- Moreover, qualitative evidence (for example in the British consular reports) does make it clear that there was a substantial decline in production, with the main question being its magnitude. On the other hand, those reports themselves were heavily reliant on the SMR surveys that are the basis for the existing series. Likewise Nichi-Man nōsei kenkyūkai, *Manshū nōgyō yōran* (Summary of Manchurian agriculture) (Xinjing: Nichi-Man nōsei kenkyūkai, 1940) gives annual summaries of the harvest situation, and suggests that the 1934 harvest was down by about 20% because of floods and bad weather; however, it suggested a much stronger

recovery in 1933 (against which 1934 is compared) than is suggested in the Yamamoto figures.

- There was a steep fall in bean exports in 1935 (which probably mostly reflected the 1934 harvest)

There are some similar questions for 1928, but that year is less crucial for the analysis in the main paper.

Appendix Table 1 presents the major outcomes of my estimation and the bases for Figures 1 and 2 in the text.

Appendix Table 1
Manchurian GDP, 1924–1937 (million 1934 yuan)

	Agriculture +	Industry +	Services +	Total
1924	1092	249	750	2091
1925	1216	257	810	2283
1926	1229	283	889	2401
1927	1552	293	1027	2872
1928	1448	304	1046	2798
1929	1457	317	1095	2869
1930	1495	319	956	2770
1931	1455	302	1001	2758
1932	1221	298	973	2492
1933	1198	334	1041	2573
1934	933	385	1169	2487
1935	1201	428	1181	2810
1936	1303	481	1309	3093
1937	1392	537	1456	3386