JAPANESE PURCHASES IN THE AMERICAN ECONOMY

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The growing importance of strategic materials essential to modern warfare among United States exports to Japan raises a number of broad questions concerning the changing economic relationship between the two countries. In the following documentation of American exports to Japan during the immediate pre-war and war periods two questions emerge. The primary one: Are these exports essential to Japan's consumption of steel, oil and other basic materials of industrial organization and warfare? The second question: Have these exports stimulated a "war boom" in the United States in any way similar to that of 1916-17, or are they likely to do so?

The facts of the case point conclusively to decisive answers for each question. They show that these American exports are vital to Japan's present purposes. They show also that the value of these exports to America is negligible in periods of prosperity and nominal in periods of recession, with the prospect of their developing into a war boom being virtually nonexistent.

The broad implications of these exports are manifold. Primarily, Japan in her desperate need for steel and other materials of this nature has been compelled to curtail her purchases of cotton and other materials such as lumber, which dominated American exports to Japan before the present crisis, in order to divert her limited funds to the purchase of raw materials and equipment for her war industries. The outlook for the revival of such Japanese purchases of a nonmilitary nature in the near future is very slight indeed.

Most striking is the manner in which the outbreak of the Sino-Japanese war resulted in the shrinkage of Japan's cotton, lumber and fertilizer purchases and the simultaneous boom in her purchases of steel, copper, oil and machinery. The following data relate these two conflicting trends—the one unfavorable to items of commercial trade, the other favorable to items of military and semimilitary trade—to the productive capacity of both the Japanese and the American industries involved. The conclusion reached is that Japan's textile industries have gradually reduced their dependence upon the United States as their principal raw material supplier, while her military and semimilitary industries have very rapidly increased their dependence upon the United States as their principal source of both raw materials and equipment. Certainly no revival in Japanese purchases of American cotton can be expected to contribute towards the solution of that chronic American problem; exports of lumber are in any case of very minor importance to the American industry. On the other hand, the new items which have dominated American wartime exports to Japan show every sign of continuing to expand at their recent rates, to the great benefit of Japan's militarized economy but with no discernible impact upon the course of the American business cycle.

Japan and the United States have figured prominently in each other's foreign trade for many years. Traditionally the United States has served Japan as her greatest silk market, silk having originally been Japan's leading export staple. In return, as her cotton and rayon textile industries grew to maturity, Japan
began to absorb considerable quantities first of American cotton and then of lumber and pulp. Thus trade between the two countries until the present decade centered about the principal crops of each. Silk and cotton figured as monocultural export crops in the respective economies, and their importance reflected the orientation of economic life towards world trade instead of away from it. The economic destination, as it were, of the commodities involved in Japanese-American trade was overwhelmingly the consumers goods category of industry and, accordingly, the effect of this trade was to expand commercial markets as distinguished from markets opened for such noncommercial purposes as armaments.

But since the Manchurian Incident, and especially since 1935, the Japanese economy has been changing profoundly. And the character of Japan's trade with the United States has changed apace. When the Manchurian Incident occurred, Japan had already attained the status of a power of the first rank in respect to the textile industries. Since then she has set herself the task of achieving the same distinction in the capital goods industries. One important consideration has been Japan's desire to acquire the wherewithal to meet the rapidly growing needs of her armed forces and to implement the more aggressive policy which she was adopting on the Asiatic Continent.

The constantly increasing export revenues of the textile industries were relied upon to finance the greater part of the new program of expansion in the capital goods industries. Whatever strain this program might force upon Japan's resources would, it was felt, be temporary. For in Manchuria Japan had won a continental frontier akin to that which confronted American industry in the latter part of the nineteenth century. It was argued, accordingly, that Japanese industry would prosper as American industry had if only its frontier could be opened by Japanese industrial capital. In order to obtain the machinery and the armament building capacity required to complete the imperial and the military tasks she was setting herself, Japan proposed to pass through a transitory period of heavy industrial construction. Once this was finished, she felt confident that any temporary financial strain would soon be converted into a permanently favorable trade balance as Japanese heavy industry substituted Japanese for foreign capital goods and as the proceeds of textile exporting were again devoted to building up domestic prosperity instead of to purchasing the war materials and equipment of foreign countries.

With the wisdom of hindsight, it is possible to say that the authorities seriously underestimated the extent to which armaments would displace the Manchurian frontier as the principal outlet for the Empire's new industries as well as the enormous growth in these new industries which would be demanded. At any rate the fact that these industries have been so largely devoted to the unprofitable production of armaments instead of to the development of the Manchurian commercial market has prolonged and steadily intensified the financial strain imposed by the program of capital goods construction.

Japan's textile industries were originally expected to finance the capital goods program. They have ended by being subordinated to it. This unexpected development has had profound repercussions upon Japanese-American trade. It has mitigated severely against Japanese purchases of American cotton and lumber, which have been curtailed for reasons of economy; these economies have resulted in curtailments in textile production in Japan. And simultaneously, Japan has begun to buy ever larger quantities of steel, metals and machinery. These mineral and metal products feed heavy industries which have been expanding rapidly relative to the textile industries. As far as the United States is concerned, however, the exports of these heavy items to Japan are much less important to the industries concerned than were cotton and lumber exports to American agriculture and forestry. Whereas Japan has come to depend on a great and increasing extent upon the heavy industry products which she now buys chiefly in the United States, her ability to continue these purchases cannot materially influence the production rates or profit margins of these American industries. Whether or not they are to prosper cannot be determined to any extent by the volume of their exports to Japan. These exports are as unimportant to American industrial activity as they are essential to the completion of Japan's present program.

Among American exports to Japan, cotton is by far the most important, and it is the one American commodity which more than all others is dependent upon exports. For a variety of reasons, however, such as the development of new cotton sources enjoying preferential markets, the introduction of import restrictions in various consuming countries and the high price of United States cotton relative to other growths, American cotton exports have been suffering from a chronic crisis for several years. To the deepening of this crisis Japan has now contributed by severely curtailing her purchases during the current crop year in order to reserve as much cash as possible for purchases of materials and equipment required for the successful prosecution of the war in China.

The current American cotton crop has reached the record total of 18.4 million bales. For purposes of comparison, it is necessary to go back to the last 18 million bale crop, which occurred in 1926-27, although
this was in certain respects also an abnormal year. In any case, the 1926-27 crop year was normal in at least one score. More than half of the total cotton produced, 10.9 million bales, was exported. By and large this ratio of exports to total crop was maintained during the early recovery years of crop restriction. Exports had declined, but so had the size of the total crop. But in 1937-38 the return of a bumper crop of over 18 million bales found exports entirely unequal to the task of rising apace; instead, they have run at about the 6 million bale rate which was barely supportable while the crop remained below 13 million bales, but which is entirely unable to absorb a sufficient quantity of the surplus yielded by a crop of such proportions. The result of the export stagnation is evident in the size of the domestic cotton surplus which, it is estimated, will be 12 to 13 million bales by August 1, when the next crop year begins. In a normal year, demand can relieve the market of little more than this amount of cotton, and this year it is certain that the recession will continue to dominate the cotton market on August 1, rendering the surplus still more difficult to carry than it would ordinarily have been.

The wartime curtailment of Japanese purchases, at precisely the time when their expansion was most needed, has been a factor of considerable importance in the growth of the American surplus. In 1936-37 when total exports failed to reach the 5 million bale mark, Japanese demand accounted for 1,451,305 bales, or some 30% of the exported total. But this year, in the face of the sharply increased surplus, Japanese takings have run closer to 33% than to 50% of their 1936-37 rate. Although Japanese textile exports have been able to perform well during the war period, largely on the basis of supplies of raw cotton warehoused before the war began, total cotton consumption has shrunk to approximately the levels of the period before the great Japanese cotton goods boom. Recently, however, the acute cotton shortage forced the authorities to ease their original restrictions to the extent of permitting monthly imports of 137,500 bales. But even if Japan is able to buy American cotton at this rate between May 1 and August 1, her total takings for the current crop year will not approach last year's figure of 1.45 million bales. Accordingly, it is no exaggeration to consider the curtailment of Japanese cotton buying in the United States (and elsewhere as well) a prime factor in the failure of American exports to maintain a 50% plus ratio to the current bumper crop and thus to contribute to the easing of the pressure put upon the domestic cotton market by the unhealthy size of the surplus.

In the parallel case of lumber, although at least half of Japan's imports have come from the United States, Japan never became a major power in the American lumber market (see the "Special Report on the Far Eastern Timber Trade," Far Eastern Survey, Apr. 20, 1938). Nevertheless lumber shipments to the Orient have also fallen to a fraction of their former volume during the last year and a quarter. Shipments in 1937 to the Far East amounted to only 1.12% of the annual production. But thus far in 1938 the Far Eastern lumber market has been in a state of collapse. According to the Lumber Survey Committee, United States lumber production has been running at the rate of barely 18 billion feet a year, a 25% decline from 1937. In spite of the smaller volume of production, however, lumber exports to the Orient have fallen from their 1937 level of 1.12% of the total to .38%; they have passed beyond the statistical vanishing point.

Now with the American building and railroad industries in their present condition of stagnation, it would be idle to attribute the current plight of the lumber industry to the cessation of trans-Pacific purchasing; these basic industries, and not the insignificant volume of Oriental shipments, determine the course of American lumber production. It is true, however, that the war crisis in the Pacific lumber market has disproportionately affected the West Coast lumber industry.

Normally the West Coast lumber industry ships most of its exports to the Far East. As a matter of fact, exports as a whole had for several years been running nip and tuck with the railroads as the second most important channel of lumber consumption, the building industry being far and away the principal source. In 1937, however, exports to the war zone declined sharply during the second half of the year. Accordingly, the 1937 total of West Coast lumber shipped to the Orient fell to 175 million feet from the 1936 level of 285 million feet; both figures compare with annual production for the region of about 6.5 billion feet. During the first quarter of 1938, furthermore, Oriental shipments collapsed to a meager 17 million feet, or to the annual rate of 68 million feet. When the war broke out in the middle of last year, some 20 million feet of lumber were already on the high seas bound for the Far East and West Coast yards were piled high with a record seasonal cut, a good portion of it intended for the same destination. The panic that developed when virtually all Japanese and Chinese orders were cancelled caused two important Tacoma mills to shut down entirely, and stopped a merger between three major producers who had intended to expand in anticipation of a steadily growing Japanese market. Although the depressed buying power of the railroads is doubtless a more important factor, the importance of the Far Eastern crisis in causing instability in this section of the American lumber industry cannot be denied.
Another commercial channel of Japanese-American trade which the present war has all but sealed is in phosphate rock, the raw material from which superphosphate fertilizer is made with the assistance of sulphuric acid. Never a very prosperous American industry, unusually large Japanese purchases of 311,535 tons contributed largely to the favorable trade returns in 1937. Japanese purchases exceeded all others, and those of Germany, the second largest buyer, by nearly 100,000 tons. Although Japan possesses deposits of only 6,000,000 tons of phosphate rock, her yearly production is about 200,000 tons. Ordinarily, as the leading trade source in the industry explains, "Japan would far rather see her merchant marine carrying exports to the United States and carrying back phosphate rock as ballast than to operate uneconomic deposits at home." But this year there is no room in Japanese bottoms for ballast. Over and above considerations of foreign exchange, cargoes of war necessities have literally crowded such commodities as phosphate rock out of the picture, so that whatever relief is afforded Japan's exhausted soil by fertilizer must come from her own sources of phosphate rock.

Steel is easily the most important of the "new" American exports to Japan, and its rise has been the most spectacular. It was in 1933 that Japan's expanding steel industry first attracted attention by importing more than a million tons of scrap. Four years later, in 1937, the output of steel ingots in Japan had doubled, reaching the new record figure of 6 million tons. As is usual in periods of rapidly expanding productive capacity, demand ran well ahead of production during these years. The deficit was made up by imports of 1.0 to 1.4 million tons of iron and steel a year. Apart from the well publicized dominance of American scrap in the Japanese steel market, it is noteworthy that American iron and steel products entered Japan in insignificant tonnages until 1937, when they suddenly sprang into a leading position which they continue to enjoy unchallenged.

Japan imported 1,475,148 tons of iron and steel in various prefabricated forms in 1936. Of this, only 56,308 tons came from the United States. In 1937 Japanese steel imports are reported to have risen by about 50% to the neighborhood of 2 million tons (excluding scrap). Exports of American iron and steel had in the meantime boomed to 990,000 tons, with scrap exports also showing a substantial increase.

Now there can be no doubt that this enormous increase in Japan's purchases of American steel has been invaluable on Japan's home front. Nor can there be any doubt that because of the war, her own steel boom notwithstanding, she did and still does suffer from a severe steel shortage. Because of the shortage, hundreds of important commercial projects involving the use of steel have been banned. Moreover, the 1937 purchases were concentrated into the wildly speculative spring months when even the United States thought it faced a steel shortage and when prices accordingly were rising to exorbitant levels which the Japanese did not hesitate to pay. Finally, the fact that Japan has continued to accelerate her steel purchases abroad in spite of her own steadily increasing productive capacity and in the face of her embarrassing financial difficulties—which have caused her to curtail textile raw material imports and to drain her gold reserve to dangerously low levels—speaks eloquently for her great need of this most basic of all industrial materials.

How important were Japanese purchases of the American steel industry? It will be recalled that the spring of the year saw steel working at the amazing peak of over 91% capacity (because of maintenance needs, the industry considers that 85% is real capacity) while the year closed with production in the neighborhood of 20%, after having experienced the sharpest decline in the modern history of the industry. It can be said categorically that the boom in exports to Japan played no distinguishable role in driving the production rate above 90% or in aiding it to resist the collapse to 20%.

Having increased its smelting capacity to 71,065,540 tons of ingots annually, the steel industry worked at an average rate of 72.39% of capacity 3% of U. S. in 1937. Allowing for the wastage involved in rolling finished steel from ingots, finished steel consumed totalled 32,531,800 tons. Of this 93%, or all but 2,356,900 tons, were consumed by American industry. The 990,000 tons sold to Japan accounted for about 38% of this exported total; Japan led all other foreign purchasers. But the 38% of American steel exports represented by Japan's takings accounted for only some 3% of total American steel consumption. Exports as a whole scarcely qualified as a major source of consumption; the still prosperous automotive industry, the spectacular growth in miscellaneous use, the container industry and even the depressed building and railroad industries, all out-ranked it by far in market importance as well as in sheer tonnage. As for exports to Japan, the fact that their extraordinary growth was made possible in the face of the early 1937 boom only because the Japanese were willing to pay astounding premiums to marginal producers, at least one of whom had been shut down for years before opening to fill a large Japanese order, shows clearly enough that it was not the boom in Japanese orders but the boom in centers like Detroit which caused the steel industry to work above its real capacity in 1937.

That this is true is shown further by the fact that the steel industry collapsed when orders from these
sources ceased and in spite of the sustained rate of shipments to Japan. During the first quarter of 1938, moreover, while the steel industry was operating at such a depressed level that even heretofore minor customers had become relatively important consuming factors, the fact that shipments to Japan were doubling again over their sensational first quarter 1937 volume had absolutely no visible influence upon the steel rate which slipped back from its abortive seasonal rise to the virtually negative 30% of capacity level.

One of the interesting points in connection with the rise in steel exports to Japan in the first quarter of 1938 to 172,816 tons, as against 87,907 tons in the first quarter of 1937, is that for the first time shipments to Kwantung figured prominently in the total. During the first half of 1937, shipments to Kwantung were barely 12,000 tons. In the first quarter of the current year they were nearly 45,000 tons.

The continued growth in steel shipments to Japan reveals also the failure of the 'Tokyo authorities' ambitious scheme of import restrictions to limit steel imports. Originally scrap imports were to have been reduced to 1,500,000 tons in 1938; it is now known that they will total at least 2,000,000 tons, and the authorities concede that they may well duplicate last year's total of 2.2 to 2.4 million tons. Nor will it be possible to reduce the volume of iron and steel imports which, in spite of the steady expansion of domestic output, will admittedly approximate 2,000,000 tons without of course alleviating the country's cumulative shortage of iron and steel products. At any rate, it is certain that however much Japanese steel purchases in the United States may be increased, they will not for many years exercise more than a marginal influence upon the domestic steel market.

Another new item in United States exports to Japan is copper. Like steel, copper shipments to Japan have soared although, like steel again, the substantial role they play in satisfying Japan's needs is not apparent in any major form in the domestic copper market. Until 1932, Japan was self-sufficient in respect to copper. In 1936, in spite of a 10% increase in the output of domestic smelters, she imported about 50,000 tons. But last year she imported 56,500 metric tons of refined copper between January and July, and her total imports are estimated to have reached the impressive record of 101,500 metric tons (111,883 short tons). Imports accounted for over half of her last year's consumption, which the American Bureau of Metal Statistics estimates to have been 209,437 short tons.

Of the 111,883 short tons of refined copper imported by Japan, the United States supplied 72,843 tons, or nearly twice as much as in 1936 (39,926 tons). Important though this was to Japan, and important though it was in relation to total United States exports of 309,611 tons, it cannot be considered significant alongside the more than 800,000 tons consumed by American industry last year.

The year 1937 saw American industry produce at capacity rates because of an amazing miscalculation. It should have been a mediocre year; the production boom, unfounded in real demand as the year subsequently showed, converted it into a boom year.

The copper industry was one of the extreme optimists responsible for this miscalculation. Production rose from 748,660 tons in 1936 to 964,176 tons. But consumption, at 803,095 tons, barely exceeded the 1936 figure of 764,560 tons. It was this miscalculation which aggravated first the spring boom and then the fall collapse in American as well as in world copper production and prices. The fact that Japan was during this period doubling her American purchases went entirely unnoticed. So similar to the case of steel is the record of Japan's copper purchases in the United States, that in this market too, her inability to secure satisfactory tonnages promptly from the major producers led her to make an unconventional offer to a marginal producer, the Granby mine in Canada which is controlled by well-known American interests, to absorb all of its output at market prices if it would reopen. This it did, and shipments have been proceeding to Japan at the rate of some 2,000 tons monthly since the latter part of 1937.

Although copper shipments to Japan at 20,807 tons for the first quarter of 1938 compared favorably with 15,993 tons for the corresponding period of 1937, they did not suffice to bolster up the depressed domestic copper market. Indeed, one of the sorry platitudes of all recession copper trade reports has for months been that "export markets have been extremely active, although sales remain negligible." Thus, one major producer reported that, in spite of quite satisfactory exports, its inventories of copper had mounted by the appalling sum of 100,000 tons between January 1937 and April 1938. The fact that exports to Japan constitute the largest single foreign outlet demonstrates conclusively that neither Japanese purchases nor foreign purchases in the aggregate are under present circumstances able to influence the domestic copper market in any decisive respect.

Oil is still another one of the strategic American exports to Japan to which textile raw materials have been partially sacrificed. During the first nine months of 1936, the United States shipped 16,574,000 barrels of oil to Japan and, during the same period of 1937, 23,102,000 barrels. Although year-end totals of American exports are not yet available, it is known that Japan's imports for the entire year were only 35,000,000 barrels and it is known also that West Coast
shipments to the Far East, meaning Japan in the first and principal instance, were sustained during the final quarter of the year. A reasonable estimate, therefore, would place American shipments to Japan at something like 30,000,000 barrels (excluding some 2,250,000 barrels exported to Manchoukuo). The crucial importance of these shipments to Japan is underscored by the fact that Japan produced no more than 10% of her requirements last year as well as by the novel consideration that, as a leading Japanese oil magnate recently said, Japan has for the first time become more interested in the octane rating, that is, the quality, of her oil than in its sheer quantity. The reason for this is of course evident in the wartime needs of Japan’s aircraft engines whose efficiency is seriously impaired by the use of low grade fuel. Satisfactory grades of fuel are most readily available, in crude as well as in refined form, in the United States.

Passing to the American aspect of this trade, exports play a very important role in the life of the oil industry. Although 1937 exports surpassed the 1929 record by a comfortable margin, rising 33% over 1936, exports of crude oil accounted for no more than 5% of production and exports of refined oils for only 9%. Nevertheless the 33 odd million barrels exported to Japan and Manchoukuo did not bulk very large against total exports of about 170 million barrels. Although the oil industry has shown greater resistance to the recession than any other major industry, it too has suffered from the prevalent malady of inventory overaccumulation. During 1937, it is estimated to have overproduced by some 47,000,000 barrels, this over and above the record volume of exports.

Japan’s demand for United States oil, however, strikingly resembles her demand for lumber in that the influence of her purchases is concentrated upon the West Coast, where it is felt to a far greater extent than throughout the country as a whole. As a matter of fact, the importance of foreign markets to the California industry is much greater than the 5 to 9% ratio of national exports to national production. In 1937 California produced 238,591,887 barrels of crude oil, and exported 65,858,945 barrels, enjoying its best export year since 1930.

In spite of this fact, the California industry has been following the familiar recession pattern. Exports have risen, but production has been falling with distressing rapidity, a condition which is true of the industry throughout the rest of the country as well. For several weeks last fall, while the oil industry apparently remained immune to the recession, California trade reports emphasized the importance of shipments to Japan as a marginal factor maintaining consumption on a par with production. But this was a temporary palliative, unable to compensate the industry for the steady decline in consumption which followed. Although thanks to orders placed last year, California first quarter exports were running slightly ahead of 1937 figures for the same period, production has had to be cut drastically and inventories have nevertheless continued to mount. This has caused a wave of price cutting, an unusual phenomenon indeed in the well-disciplined oil industry. Particularly keen competition was evident among leading producers on bids for 9,000,000 barrels of fuel oil and 14,000,000 barrels of gasoline for the United States Navy, so keen in fact that one interested official characterized it as “plain and unadulterated dumping.” It is interesting that the oil requirements of the United States Navy for deep sea maneuvers given in one order are exactly equal to the record nine months purchases of American oil by Japan when she is engaged in war. The inability of the United States Navy order to stabilize the California situation shows therefore that, in spite of the much greater importance of exports to the Orient in California than in other oil fields, here too it is the domestic situation and not the volume of export demand which determines the well being of the market.

The steel metals and oil which Japan has been importing in such increasing quantities are, however, but a means to an end which they serve. They are raw materials. The industry which absorbs and processes them into the finished products of an industrial system is the industrial machinery and machine tool group. Japan’s slowness in developing large-scale productive capacity for these raw materials which serve the capital goods industries has of course been due to her lack of the power to consume these materials, that is, to the lack of machinery to handle mass production quantities of steel and metals.

The enormous expansion of metal demand from the armed forces as well as from the various industrial outlets has taxed the absorptive power of the Japanese metal working industry far beyond its capacity to consume the physical quantity of metals produced and imported since the economic process described in this article began. All through 1937 the small Japanese industry carried “in hand orders to keep it busy for at least two years to come.” It failed to keep pace with demand, moreover, in spite of the investment of ¥340,329,000 during the first eight months of the year in new facilities for producing precision machinery and machine tools.

What with its great success in shipping and textile manufacturing, Japanese industry has enjoyed ample stimulus to develop primary engineering capacity. But by the same token, the machinery industry as a whole has been oriented towards the production of shipbuilding facilities and textile machinery. Thus, although the machinery industry produced ¥1,874,000,000 worth of
engineering products in 1937, it made only ¥30,000,000 worth of modern machine tools suitable for use in the mass production of American-quality automobiles, airplanes and railroad equipment. And now that she is becoming a continental empire, Japan's need for these means of land transport is as acute as was her need for the means of sea transportation when she was growing into an insular empire.

A list of the companies which are demanding machine tools in more and better allotments is sufficient to explain the reason for the premium which these highly complicated engineering products now carry in Japan. First, there is the aircraft industry. The Showa Aircraft Industry requires a million yen worth of machine tools. Close behind it, the Japan Aircraft Company and the Nagoya plant of the Mitsubishi Heavy Industries organization are unable to develop their expansion projects until new machine tools have been secured. In the automobile field, the Nissan and Toyota concerns figure prominently as constant purchasers, while Mitsubishi's Tamagawa works and the Kawasaki plant of the Ikegai Iron group are trying to buy several million yen worth of such equipment. It should be realized that these concerns have been in the machine tool market at home and abroad continuously for over a year and a half, and that they still very largely lack adequate facilities for gearing production to the demand for airplanes and automobiles. To overcome this desperate shortage, every manner of heavy industry concern has been going into the machine tool and auto and aircraft appliance field as a side-line, receiving handsome government subsidies and assurances of sustained work.

Nevertheless the rapid strides being made by the domestic industry still leave it admittedly far from being able to satisfy the multiplying demand for this type of equipment. When it is considered that any automobile transmission or engine must be processed by batteries of machine tools, each highly specialized and complex, it is clear that Japan's professed desire to convert her growing steel output into millions of automobiles and thousands of airplanes must halt at least temporarily until this technological neck of the bottle has been widened. Virtually official admission that the domestic machine tool industry is still largely unable to handle the national consumption has recently come from the Japanese Railway Ministry itself, which "will purchase abroad tools costing ¥1,000,000 because domestic firms cannot make desired deliveries."

It is not surprising therefore that Japan should have turned to foreign sources in order to compensate herself for her own engineering deficiencies in this respect. And, in line with her increased purchases of steel and metals in the United States, it is no less surprising that she should have extended her American purchases to this key industry. For if either her metallurgical industry or her machine tool industry are to function at all, they must function in harmony with one another. The bulk of Japan's high-grade alloy steels now come from the United States, as has virtually all of the equipment which she has recently installed for expanding her own steel making capacity. Since American machine tools are made to process American steels, it has been logical for Japan to have supplemented such purchases with machine tool purchases from the same source.

In 1937, we have seen, Japan produced roughly ¥30,000,00 worth of machine tools suitable for the auto, aircraft and railway equipment industries (1935 output was valued at ¥21,000,000). The total value of her machine tool imports from the United States, at ¥9,166,154, all but equalled the value of her domestic output. Actually, her imports in 1937 do not adequately reflect the extensive volume of her purchases. These products take many months to manufacture, so that the full force of Japan's 1937 orders will not be felt until the complete 1938 trade returns are released. Her 1936 orders which the above figures reflect, were much less than those tendered last year. Meanwhile, a compilation of shipments actually consummated to Japan and Kwantung shows that the 1937 total of ¥9,000,000 was all but equalled. During this shorter period the value of exports was ¥7,890,959. It would have been greater had not exporters held up shipments in payment for which the Japanese were not able to release foreign exchange. As regards metal working equipment in general, Japanese imports from the entire world were some $30,000,000 in 1936 and nearly $53,-000,000 last year. Of this latter total, fully $30,000,000—by far the lion's share—came from the United States. It is interesting to balance against this impressive record achieved by the American engineering industry in the Japanese market that of Japan's political ally, Germany. In 1937, in spite of all the circumstances favoring such trade, Germany shipped less than $5,000,000 (RM 9,424,000) of metal working machinery to Japan.

The year 1937 was a record year for United States machine tool exports, whose value exceeded $40,000,-000. Although the $9,000,000 portion of this claimed by exports to Japan was important, it was overshadowed by shipments of $11,300,000 to England and by the diversified volume of smaller orders from many other countries. In the broader industrial machinery field, Japan's $30,000,000 worth of imports were substantially surpassed by Soviet Russia, which is said to have imported very nearly $70,000,000 worth.

How important was this source of revenue to the

U. S. Chief Source
United States machine tool industry in 1937? Any answer to this question must be preceded by the explanation that the machine tool industry, while it provides the basis for mass production, is itself very far from being a standardized, mass production industry. Plants are small and specialized, products are individual rather than wholesale, capacities are sharply limited and methods lag far behind the rationalized procedure of its best customers, notably the automobile industry.

In January 1938 the recession reduced monthly machine tool orders to a bare $3,600,000. In April, 1937, at the top of the boom, their value was $19,000,000. Thus English and Japanese imports combined for 1937 as a whole barely topped the orders received by the industry during the best month of the year. Of the April 1937 total, furthermore, only 17% of the orders received were of foreign origin. Foreign orders bulked much larger, however, in January 1938, when they absorbed fully 63% of the total. Although their weight was insignificant when the industry was at the top, they had become many times more important than domestic orders for this essentially investment type of equipment at the bottom of the recession.

The weight of Japanese orders during the April prosperity is aptly illustrated by the case of Japanese representatives who attempted all last spring to purchase the impressive total of 500 lathes for engine building. They were willing to pay a handsome premium, but they insisted upon delivery by January 1938. The industry was so rushed, however, that it was not until well into the last half of the year that the first wholesale contract, involving 46 lathes, was reported to have been signed.

On the other hand, it cannot be denied that Japanese orders, combined with Russian and British orders, constitute the recession mainstay of the industry. Foreign orders are reported by trade authorities to average 60% of current backlogs, while in the case of certain outstanding arms, aircraft and auto equipment producers, the percentage of foreign to total orders is closer to 70%. At any rate, most leading companies report that this source of business is sufficient to provide them with full working schedules for the better part of two months if no new orders are received from either foreign or domestic sources.

It should not be thought, however, that any danger exists that this isolated example of Japanese and other foreign orders sustaining productive activity will produce a war boom. In the first place, the inflated volume of foreign orders is a mere fraction of the industry’s norm of domestic orders. In the second place, the industry is too much of a specialty producer, accounting for too little employment and basic material consumption, to stimulate anything remotely resembling a war boom. And finally, as soon as orders from automobile and railroad sources revive, foreign orders will again shrink into the background even if they continue to expand at their 1937 rate. An important factor which will tend to produce this latter result is the maintenance and replacement problem in countries which, like Japan, import a good deal of machinery which they are unable to replace or even to service.

In sum, the effect of Japanese orders upon the United States machine tool industry provides a typical illustration, duplicated in the cases of steel, copper and oil, of the unimportance of Japan’s record purchases of strategically necessary materials to the American industries concerned. At the same time, the machine tool illustration provides an extreme case, not duplicated or likely to be duplicated in the mass production industries involved in large scale exports to Japan, of the importance which such orders suddenly assume in times of domestic recession. The fact that the machine tool industry is unique in this respect, as well as that it is not large enough to influence the American business cycle in one direction or the other, as the automobile and railroad industries do, would seem to offer sufficient proof that war or industrial expansion orders from Japan have not and are not likely to stimulate a war boom in American industry.

**SPECIAL SOURCES:**

*Commercial and Financial Chronicle; Wall Street Journal; Iron Age; Steel; Automotive Industries; American Machinist; Oil and Gas Journal; Petroleum Press Service; National Petroleum News; World Petroleum News; World Petroleum; American Bureau of Metal Statistics; American Metal Market; Lumber Survey Committee; Bureau of Foreign and Domestic Commerce; Trans-Pacific; Oriental Economist; London Financial News.*

**FEW NEW ASPECTS TO SOVIET-JAPANESE FRICION**

Soviet-Japanese relations in the last few months have been chequered by numerous friction-provoking incidents. The hardy perennials of fisheries, Sakhalin concessions, and the former Chinese Eastern Railway have made their appearance, complicated by detention of planes and boats, the closing of consulates, frontier incidents, etc. Further grounds for exchange of diplomatic notes have emerged from the warfare in China. Reports from Tokyo speak of Japanese preoccupation with these points of friction. There has not been a time since 1931, however, when such friction did not exist in one form or another, and frequently these occur-