The Activities of Japan’s Industry to Revive the Supply Chain

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Ministry of Economy, Trade and Industry
• Following the massive earthquake, many factories located in the Tohoku and Kanto regions stopped production. Since then, major companies that have relationships with global supply chains have already recovered and restarted their operations.
• On the other hand, some factories have suffered considerable damage. The Government of Japan should pay attention to the situation continuously.
• However, casting the eyes over the economy of Japan, a positive movement for the revival can be seen in several situations. (e.g. the supply increase of electricity for blast furnace companies, the increase in demand for household wiring.)

【The distribution of main factories in the Tohoku and the Kanto regions】
The Revival of the Supply Chain
（Electronics I）

〈Outline of Electronics Industry〉
○ Because of the earthquake, a raw materials and product parts factories that have suffered damage are being brought back into operation one-by-one. There are no negative influences on the production of electronics, e.g. flat panel TVs, mobile phones, smart phones, and lithium-ion batteries, etc..

• A company that produces and exports silicon wafers for overseas had its factory damaged by the earthquake. At present, operations have been resuming and the company has 2–3 months of stocks both inside and outside Japan. In addition, its overseas factory was not affected and therefore, there is not a significant influence on its customers.

• A company that produces and exports silicon wafers for overseas had its factory damaged a little. The company has resumed production in Tohoku and has increased the production amount at its factory in other area. At present, its production has already surpassed its pre-earthquake level.
The Revival of the Supply Chain

（Electronics II）

• In regard to the aluminum rolling industry, damaged factories have been restarted, and have resumed full-scale production. A factory responsible for 60% of global aluminum substrate production for HDDs regained its full-scale production at the end of March.

• The production of ultra-slim copper foil for flexible bases and lithium-ion batteries initially declined due to rolling blackouts. However, performance has improved gradually since the end of March. It is expected that full-scale operation will resume in early May.

• The production of ITO targets used for manufacturing of liquid crystal panels, flat panel TVs etc., was suspended due to the effects by the earthquake. However operation has restarted. Therefore, because of this and because of the use of alternative inventory sources, a tremendous impact on the supply chain has not been seen.
A company that produces and exports small and medium-sized LCDs initially stopped its operation because its factories were partially damaged and production was suspended by rolling blackouts in March. However, at present the company has resumed operation, and therefore, there seems to be no further influence on cell phone, smart phone and tablet PC production and delivery.

A company that produces and exports lithium-ion batteries initially stopped operation because its factories were partially damaged and production was suspended by rolling blackouts. However, at present the company has resumed its operations sequentially.

A company that produces and exports electrolytic condensers reduced its production because its principal factories were partially destroyed. After that, the company proceeded with the task of recovery and expects its assembling factory to resume partial operations in early April, and its material factory to do so in early May. Therefore, the influence on the supply chain is thought to be limited.
The Revival of the Supply Chain
（Electronics IV）

• A company producing fluted plates used for semiconductor packages that are supplied to overseas suspended its operation due to trouble in securing raw materials caused by the rolling blackouts. Since then however, it resumed operations at a good level. At present, the company has announced that it is facing strained material supplies, and is also offering alternative sources for its customers accordingly.

• A company producing solder masks used for processors that are supplied to overseas suspended operations due to trouble securing raw materials from chemical companies. After negotiations, the company secured a stock of raw materials that will enable it to operate until mid-June, and has informed processor makers that it will ask its users to evaluate sample products using alternative materials in mid-April.

• A company producing liquid epoxy encapsulants used for semiconductors that are supplied overseas suspended its operation due to trouble in securing raw materials from chemical companies. At present, the company has secured a stock of raw materials until mid-May, and is also considering alternative supply schemes by means of sourcing from overseas. It is expected that both sides will be in contact and confirm the adjustment of supply.
The Revival of the Supply Chain
(Aircraft)

Outline of Aircraft Industry

Just after the disaster, some factories temporarily decreased or suspended their productive activities. However, they’ve already resumed their operations and moreover expect to achieve overall level operation in May, and full-scale production in June.

- A company exporting aircraft engine shafts for the United States, France, and Britain has been adjusting delivery dates because of production lost through rolling blackouts. Now that the blackout issue had been solved, and the company can resume its production, there is no impact on its customer’s operations.

- A company, whose factory was damaged by the earthquake disaster, manufactures and exports turbine blades and engine disks of aircraft engines to the United States and Europe. The affected factory has already had its power supply restored and had some of the manufacturing facilities repaired. The overall operation will resume in May, and the production rate is expected to get back to normal in June. Now, the company is considering a new production plan to make up for the production delay and increase output still more.
A company that produces and exports the elements of oil seals has restarted operation, though its factories were severely damaged by the earthquake.

A company that produces and exports transmissions had a second supplier that had been damaged by the earthquake, but its operation has returned to its baseline performance.

Outline of the Automobile Industry

Just after the disaster, the production of automobiles was reduced or suspended but there have been movement toward resumption of production for several models with companies adjusting their operational procedures.
The Revival of the Supply Chain
（Automobiles II）

- A company exporting rolled steel used for autos for the United States and steel pipes for Germany has suffered no impact in terms of the production of its customers as resuming operation one by one, in addition to the customer’s stock.

- A company which exports paint luster pigments to the United States and Europe was damaged by the earthquake and forced to stop production. Some companies stopped selling cars with certain colors because of a lack of alternatives, but there has been no effect on sales cars with other colors. It is expected to start supply after June.

- A company which exports ECUs, airflow sensors and power modules for inverters was late to supply parts to automobile manufacturers, but it resumed regular operation before the end of March.
The Revival of the Supply Chain
（Automobiles Ⅲ）

- A company that produces and exports permanent magnets used for driving motors of hybrid vehicles and electric vehicles for overseas suspended operations due to rolling blackouts. At present, all operations have resumed and the company has already secured a stable supply for its customers.

- A company that produces and exports MCU (semiconductors) for a wide range of products (such as cars, electromechanical products, and industrial machinery) was forced to stop operation because its factories were damaged by the earthquake. Maximum efforts for the earliest recovery have been made and as a result, it will move up the schedule for mass production at the 200-millimeter (mm) (8-inch) wafer fabrication line to June 15, this is at least one month earlier than the previous schedule.
Positive Aspects of Japan’s Industry

• Each company with blast furnace put its priorities on the production of revival-oriented materials, e.g. light section steel for temporary shelters and large diameter steel for pipes. Moreover, in regard to power shortages and energy saving, these companies enhanced their supply of electricity for Tokyo Electric Power Company, while expanding their joint power generation, independent power production, and private power generation, etc.

• In regard to electric wires used for dwellings vital for economic revival, the production has been focused in western Japan. The factories in the area have enhanced their operation, and achieved 120% production in April, overtaking their pre-disaster performance.

• March manufacturing machinery orders exceeded 100 billion yen for the third month in a row and orders were 49.6% higher compared to the same period last year. This trend owes to the sort of demand found in a developing nation, especially China. From now, more external demand is expected.
Silicon wafers … Laminated materials made from sliced monocrystalline of high purity silicon, which are used for mobile phones, digital consumer electronics, and micro controllers in automobiles, etc.

Flexible base … Wiring boards able to be transformed repeatedly by the application of a small amount of strength. These materials are thinner than ordinary printed substrates, and used for wiring in movable components.

Ultra-slim copper foil … Copper foil attached to copper-clad laminate; its thickness is adjusted according to respective user specs.

ITO target … Principal materials used for the production of transparent electrode of LCD TVs or solar batteries. These are easily processed and are highly transparent.

Electrolytic condensers … Able to accumulate a large capacity of electricity using oxide films formed on the surface of an aluminum electrode.

Copper-clad laminate for printed circuit boards… Principal boards that form the base for PCs or mobile phones, attaching copper foil to insulators made of resin and base materials.

Solder mask for semiconductor … Insulation film that covers the surface of printed circuit boards and protects circuit patterns.
Liquid epoxy encapsulant for semiconductors … Protective materials to maintain stability for long periods of time, protecting semiconductor tips or joints from stress, e. g. temperature or moisture.

Engine shaft … Axis parts rotating at high-speed in jet engines
Turbine blade … Long and slender blades that catch air currents from the front and rotate the disk.
Engine disk … Disk attached to the rotation axis of engines. Turbine blades are attached to the edge of the disk.

Transmission … Converting power from the engine into rotational speed and velocity according to the running condition of the automobile; transmissions have a major influence on fuel cost performance and riding comfort.

ECU… Devices that electrically control engine, transmissions and air bag operation.
Air flow sensor … Sensor measuring air content absorbed in the engine; has a major influence on fuel cost performance
Power-module for inverter … Changes electric current from direct to alternating current.