

CSTI POLICY BRIEFING NOTE

Country Overview of Manufacturing Policy Japan

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Overview

Japan is one of the world's most sophisticated manufacturing nations with world-leading firms in a range of industries. Japanese firms specialize in high-quality components and products, and excel in managing complex global industrial networks and sophisticated integration engineering. [According to UNIDO](#), Japan was responsible for over 14 per cent of the world's manufacturing value added (MVA) in 2010, behind only the US and China.

Automotive and electronics represent two major pillars of Japan's manufacturing industries— Japanese firms commanding around 30 per cent global market share in car production and over 60 per cent market share in digital cameras. Japanese firms also excel at material processing and mechanical production activities, often carried out by smaller firms. They are global leaders in a range of areas such as aircraft components (notably in aerostructure and avionics system components), robots (capturing over 70 per cent of the global market), and fine chemicals.

Japanese firms have traditionally conformed to *keiretsu*, pyramid-like structures of vertical integration whereby smaller firms — producers of components and manufacturing equipment and related industries — are nurtured and protected by larger manufacturers of assembled products to which they supply highly specific components and processes.

The environment for Japanese manufacturing industries has remained extremely challenging since the global economic crisis of 2008 and, of late, concerns have been raised at government level with regard to the ability of Japanese industrial structures to remain competitive in the face of international competition. Pressures on Japanese industries were exacerbated by the Great East Japan Earthquake in March 2011, which had long-term harmful effects not only to Japanese but also to global supply chains. The dependency on the automotive and electronics industries and the transfer of production and other high-value-added activities overseas have also been cited as potential risks in the future.

The government of Japan refers to the 'six-fold agonies' faced by Japanese industries which have a strong effect on policy decisions: yen appreciation, comparatively high corporation taxes, delayed free-trade agreements, 'heavy employment rules', stringent environmental restrictions, and unstable electricity supply.

National Policy

New policy approach to effect industrial change

Japanese policy since the turn of the century has evolved towards an increased emphasis on cross-cutting policies over sector-specific approaches.

The intention is to support a shift from a 'mono-pole' structure based on automotive and electronics, towards a sustainable 'multi-pole' one, enabled by the development of five 'strategic industrial fields': infrastructure-related industries (e.g. nuclear, water, and railroad); next-generation energy solutions (e.g. smart communities and next-generation automobiles); creative industries; health-related industries; and frontier fields (e.g. robots and space).

This proposed shift in emphasis has been coupled with a [growing recognition](#) of the need for a more active role of the state in strengthening industrial competitiveness in the face of mounting challenges faced by Japanese firms. A new policy agenda has emerged, which seeks to facilitate a reorganisation of the domestic industrial structure and promote a more active participation of Japanese firms in global markets. In 2010, the government announced an economic growth strategy (updated in 2012) called the "[Rebirth of Japan](#)", setting out economic goals for 2020. Taking advantage of Japan's strengths in manufacturing and technology, the strategy [targets](#) the development of over US \$1 trillion of new industries and the creation of 4.7 million jobs by 2020, along with sundry [other goals](#).

Overall, this new policy agenda has driven the establishment of a range of measures. To improve Japan's overall competitiveness as a manufacturing hub, measures have included: a tax reform that seeks to take Japan's corporate taxes closer to international levels; new incentives to attract high-added-value corporate functions to Japan; and increased investment in logistics infrastructure. In order to support the deployment of Japan's technologies and products into the world market, the government has promoted the move from the sale of individual products with advanced functions to the provision of integral solutions combining manufacturing and service components in areas where Japan is perceived to have a competitive edge. Emphasis has also been placed on the deployment of low-carbon energy generation and distribution technologies in high-growth, mainly Asian economies. Furthermore, since Japan depends on imports to satisfy more than 90 per cent of its energy demand, a guiding objective has been ensuring a stable energy supply from overseas. Bilateral collaborative frameworks with resource-rich nations have been expanded — typically involving infrastructure development projects with the participation of Japanese firms — and the supply of risk money for resource exploitation and development projects has been enhanced.

A number of measures have also been put into place to address the perceived inward looking tendency of the traditional 'pyramid' structures of Japanese industries and encourage SMEs to compete in global markets. Examples include the creation of an SMEs' overseas expansion support programme, extended guaranty insurances on overseas expansion, as well as new technical advisory services. Other key drivers in influencing industrial policy in Japan include the economic pressures that were a legacy of the financial crisis in the late 1990s, labour population decline, and awareness of calls for stronger innovation policies relating to manufacturing coming from economic competitors such as the US, China and Korea.

Government Initiatives

There have been several major industry-relevant policy initiatives since 2000.

Law on Special Measures on Industrial Revitalisation

Introduced in 2001 with the aim of alleviating excess debt and capacity, this law promotes company restructuring by providing tax incentives and financial assistance. It has been applied to over 400 firms as of October 2013.

Growth Strategies

These strategies are driven by the Prime Minister and offer guidelines for budget allocation across government. At least five growth strategies have been published since 2000. Drafting these strategies has been an important part of METI's (Ministry of Economy, Trade and Industry) work.

Energy conservation: Top runner program

Introduced in 1998, it focuses on tackling climate change by setting future energy efficiency goals for 26 products, based upon high-performance market benchmarks.

Innovation Network Corporation of Japan (INCJ)

Launched in 2001, this semi-public investment company aims to promote the creation of next-generation businesses through 'open innovation'. It has invested over 360 bn yen in around 40 companies.

Eco-point Program and Eco-car Subsidy

Launched in 2009, this programme is aimed at boosting consumption of energy-efficient products and transitioning to a low carbon society. Around 1.6 trillion yen, or over £10 bn, has been spent, benefiting the electronics and automobile industry.

New cutting-edge 'world-class R&D centres', with the participation of industry, academia, and government, have also been announced to promote industrial agglomeration and the commercialization of joint research. These centres are expected to contribute to further R&D investment in the private sector and contribute to achieving the national R&D investment goal of 4 per cent of GDP by 2020.

Central Government Policy Actor

Ministry of Economy, Trade and Industry

In 2001, the [Ministry of Economy, Trade and Industry](#) (METI) was created, following the merger of the Ministry of International Trade and Industry (MITI) with agencies from other ministries related to economic activities, and it has primary responsibility for [Japanese manufacturing industry](#). METI has a wide policy brief, overseeing several key agencies and offices, including the [National Institute of Advanced Industrial Science and Technology](#) (AIST), the [Small and Medium Enterprise Agency](#), the [Manufacturing Industries Bureau](#), the [Japan External Trade Organization](#) (JETRO) and the [Japan Patent Office](#) (JPO).

METI, in conjunction with the [Ministry of Health, Labour and Welfare](#) (MHLW), and the [Ministry of Education, Culture, Sports, Science and Technology](#) (MEXT), publishes an [annual report](#) on measures the government takes to promote manufacturing, called the [White Paper on Manufacturing Industries](#) (Monodzukuri). Monodzukuri is described as the "art of making goods that has supported Japanese culture and industry and helped to improve the lives of the Japanese people". To acknowledge its importance and promote its status in Japan, the biennial [Monodzukuri Nippon Grand Award](#) was established in 2005.

The main policy development body in the Government of Japan is the [Council for Science and Technology Policy](#) (Council for Science and Technology and Innovation?), set up in the Cabinet Office in 2001. The Council "serves as the headquarters for the promotion of S&T policy, overlooks all of the nation's S&T, formulates comprehensive and basic policies, and conducts their overall coordination".

Innovation Agencies

National Institute of Advanced Industrial Science and Technology (AIST)

The [National Institute of Advanced Industrial Science and Technology](#) (AIST) is an Independent Administrative Institution (IAI) within METI, and is Japan's primary publicly funded research organisation. AIST divides its research into two streams: Type I Basic Research and Type II Basic Research. Type I Basic Research is concerned more with fundamental scientific research, while Type II Basic Research refers to "tackling social issues using multidisciplinary, cross-disciplinary and interdisciplinary research".

Japan Science and Technology Agency

An IAI within MEXT, the [Japan Science and Technology Agency](#) (JST) is one of the main institutions responsible for implementing science and technology policy in Japan. It also implements the Government's Science and Technology Basic Plan. JST also contains the [Center for Research and Development Strategy](#) (CRDS).

Japan Society for the Promotion of Science (JSPS)

The [Japan Society for the Promotion of Science](#) (JSPS) is another IAI within MEXT, with a brief that entails the advancement of science in all fields of the sciences and humanities. It largely engages with individual researchers, universities, and research institutes, and plays a "pivotal role in the administration of a wide spectrum of Japan's scientific and academic programs". The main functions of JSPS include supporting "scientific cooperation between the academic community and industry".

National Institute of Science and Technology Policy (NISTEP)

The [National Institute of Science and Technology Policy](#) (NISTEP) – is a national research institution under the Ministry of Education, Culture, Sports, Science and Technology (MEXT). It is expected to participate in the policy decisions relating to science and technology, and is designed to be collaborative and cooperate with other government agencies. NISTEP has three stated missions:

1. To forecast policy issues and investigate them through autonomous research
2. To carry out research in response to requests from government agencies
3. As a core institution in the field of science and technology research, to provide data that forms the basis of research and play a key cooperative and contributing role in activities with other institutions and researchers, in order to contribute to the expansion and accumulation of knowledge.

New Energy and Industrial Technology Development Organization (NEDO)

The [New Energy and Industrial Technology Development Organization](#) (NEDO) is an IAI whose budget is largely provided by METI, and which organises and promotes R&D. The [mission](#) of NEDO is (i) to address energy and global environmental problems and (ii) enhance industrial technology. NEDO has operations in Japan and several overseas offices and projects. Notable collaborators on projects include Sandia National Laboratories.

Other Key Actors and Initiatives in Japan Manufacturing Policy System

Another significant body in Japan is the [Keidanren](#) – the Japanese Business Federation – whose membership comprises Japan's top companies and industry associations (1,309 companies, 112 nationwide industrial associations and 47 regional economic organisations, as of July 1, 2014). In 2011, the Keidanren published a [growth strategy](#), outlining measures to achieve sustained economic growth

(2% in real terms and 3% in nominal terms). The strategy featured the following five policy recommendations to “enhance Japan's international competitive advantage as a business location”.

1. Fundamentally revising energy and environmental policies
2. Taking measures to combat deflation and stabilize exchange rates
3. Reducing the burden on companies, including corporate tax and social security premium
4. Participating in the Trans-Pacific Partnership and promoting other high-level economic partnerships
5. Developing employment policies based on a diverse labour market

The growth strategy also includes recommendations for corporate action to accelerate growth, which includes calls to improve competitiveness by forming industrial clusters.

Appendix 1

Key Documents

2009

2011

2012

2013

Key Agencies

Universities/Think Tanks