A window on Pacific

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Technological barriers, a double-edged sword in the age of globalization

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Models of economic development in modern industrialized societies have never enjoyed greater scrutiny or indeed provoked more contentious debate. This is particularly the case in countries like Italy, where under the new government, observers predict the development of an economic policy to be rooted in euro-scepticism and a generic aversion to globalization.

The extent of the political debate is such that according to commentators, an economic policy which indulges in protectionism might become almost unavoidable in the current increasingly globalized market conditions. The fear of dealing with "too little cake for all" may provoke a greater "selfishness" as a sort of "basic requirement" (a kind of "homo homini lupus"). This would subsequently lead to a belief in the defence of corporative interests within the country and the partial closing of the economic borders. All in the hope that protectionist policies will defend or at least slow the rapid erosion of a country's international competitiveness.

This paper will investigate such issues in context of the Japanese experience and how technology can play a determining role in these protectionist policies. The analysis begins, however, with some economic considerations about the Italian industrial model.

The Italian economy suffers from low international competitiveness caused, among other factors, by the limited size of the majority of enterprises. These companies, which cannot benefit anymore of the periodic competitive devaluations of the Lira, Italy's former currency, can only hope to recover competitiveness by means of increasing their productivity.

Apart from process and product innovation, the growth of the production structures, along with the consequent and implied economies of scale, remains one of the few solutions to the problem of low productivity of Italian enterprises. By creating enterprises of greater size, economies of scale can guarantee an enhanced productive ability that lowers the selling cost and prevents other potential competing enterprises from entering the market.

In order to take fully advantage of economies of scale, enterprises need larger and larger markets. In fact, economies of scale also require a larger input of production factors (capital, labour and technology) in order to produce increased amounts of goods. Only access to expanding markets will allow these enterprises, usually multinationals, to acquire, at the best price, productive factors and to satisfy the potential demand. In this way, they can operate at the optimum production scale, and defend profits, which in turn are re-invested into the factors of production and finance research and innovation processes.

Unfortunately, it is not obvious or easy to convince small and medium enterprises (SME), especially Italian ones, of the necessity to build up to a larger size that allows them to engage in the internationalization process, often the key basis of the development of economies of scale.

In the case of Germany however, small and medium enterprises have picked up on the importance of this process. After several difficult years of restructuring of their production system, German current accounts began to record a budgetary surplus, regardless of negative factors such as the Euro appreciation and the competition of the cheap Chinese labour costs.

Therefore, it could be useful, before resorting to a protectionist policy in order to defend domestic industry, to instead push enterprises to exploit international markets, and to learn from the Japanese experience, the second largest world economy after the United States.

Japan, over time, has been characterized by an autarkical tendency ascribed not only to cultural tradition, but also to limited worldwide production capacity after the Second World War. Each domestic economy was able only of satisfying domestic demands and only gradually the world market recommenced the development of strong international trade. As a result, domestic markets were naturally protected against international competition.

Unfortunately, over time, the natural protection due to the language and domestic regulation of a country like Japan, experiencing strong internal demand has jeopardized the capacity of several Japanese companies to engage in successful international competition, to develop R&D functions and, ultimately, to improve overall productivity.

Actually, an excessive concentration on domestic markets, beyond any explicit strategy and protectionist sentiment, has over the time resulted in a loss of competitiveness, due to the fact that enterprises did not need to grow internationally, thanks to their huge domestic market.

Let's analyze the experience of Japan, an economy with a GDP over 4 trillion US dollars, a per-capita income around US$35,000, official reserves close to one trillion of US dollars (second in size only to those of China) and post savings assets equal to near three trillion dollars (the largest in the world), similar in size and concentration to a sovereign wealth fund.

The country has achieved its own development due to a network of large enterprises, which created a protected market and outlet for domestic small and medium enterprises. Apart from conglomerates like Toyota, Mitsubishi and Hitachi, in Japan, there are about 5 million SMEs (98% approximately of the companies), which employ 77% of the workforce, yet generate only one-third of the GDP. In Japan as well in Italy, SMEs are at the core of political debates regarding the reasons why market share is being lost in international markets to competitors from South Korea, Taiwan, India and China in primis.

The Japanese industrial model was developed in a framework in which the necessity, more than the opportunity, was to satisfy domestic demand after the end of the Second World War. Once domestic demand was satisfied, it was necessary for Japanese enterprises to head towards foreign markets. Larger enterprises were the first to search for new markets, to sell products but also to buy production factors, in order to contain costs and to increase international competitiveness. Toyota, the world's largest car-manufacturer, is a positive example of how to produce and compete both on domestic and international markets.

The size and the current international relevance of large enterprises of electronic industry like NEC, Matsushita, Sanyo are negative examples: having embraced lately and only partially the globalization process, at the moment, they have to compete with Taiwanese, Korean, Indian and Chinese companies in difficult conditions.

Huawei, the Chinese company until just a few years ago unknown to most, in 2007 supplied 40% of the new infrastructures for cellular telephony in the world. The loss of quotas by Japanese large enterprises on markets once dominated by colossus like NEC, Ericsson, Nokia or Lucent is evidence that the international competition is intensifying in fields of elevated technology. It also shows that competitive advantages can be lost, if the efforts to innovate both product and production processes and to rationalize costs' structures are not continuous.

The example of the Japanese manufacturers of mobile phones can show how autarkical tendencies have generated proprietary technological standards, which are actually more effective, as barriers, than tariffs. At the beginning of the 1990s, when the mobile telephony era was dawning, the US market, the first one to develop, was dominated by Toshiba and Panasonic. Towards the latter half of that decade, when in Japan the first technological wave of mobile technology began, Japanese large mobile-phones' manufacturers focused on the domestic market, and neglected the US one. As results, they developed cost structures that were not aligned with international standards.

However, Japanese cell phone productions continued to enjoy domestic dominance on a market substantially closed, due to the technological standard (PDC) developed and used only in Japan. In fact, in the rest of the world, standards were different, mainly GSM. Barriers to entry in Japan were so high for foreigners that Nokia, Ericsson or Motorola were excluded for a long time from the Japanese market. At that time, Japanese production costs were not an important issue for producers, and the domestic market was pushed to accept these and other dis-economies (until last year, in Japan, there were thirteen manufacturers of cellular telephones, among them there were quite a few inefficient ones).

Over the time, however, the Japanese standard had to accept new and more advanced technological standards, shared at worldwide level (mainly the 3G-UMTS). As a result, Japanese manufacturers of mobile phones begin to face intense competition on the domestic market from foreign competitors, while they are absent from the worldwide market.

Samsung, a Korean manufacturer of mobile phones, with a world-wide market-share of about 15%, second only to Nokia with a market-share close to 40%. The world market shares of all the Japanese producers of mobile phones (so far, only nine survived to the first wave of consolidation) make little more than a few percentage points of the world market-share.

Samsung, that started mobile phones production almost ten years after its Japanese competitors, embraced the prevailing standardization at worldwide level, chose to compete globally, also in developing markets, where ITC are recording very rapid rates of growth.

On the contrary, Japanese manufacturers were interested only to the domestic market. Today, they are in the position to neither taking part as principal actors in the international process of consolidation of the telecommunication industry, nor to sell, even in periods of abundant liquidity on the financial markets until one year ago, their activities to private equity funds, ending up with only one option left, scaling down the production (as happened to Mitsubishi).

The impact of the crisis on the mobile phone segment of companies like Sanyo, NEC or Mitsubishi is severe also for the companies of their related network. Along with Sanyo, for example, suffer many other companies that produce components for mobile phones, and with them thousands of workers. These companies were accustomed to a network of cross-participation. They are used also to be financed by their main customers, usually medium size and large Japanese enterprises, which used to operate in a domestically protected market. To these companies, reaching out to international markets is now practically impossible due to their uncompetitive production costs.

The Japanese experience seems to suggest that relying on markets that are protected with tariffs and/or on technological barriers can be harmful for the long term growth of enterprises.

The analysis, useful for enterprises of large size like Toyota and Sony, is even more valid for the plethora of small and medium enterprises that, today, see their market shares eroded because of high production costs that are just not competitive anymore.

Trying to stop the clock and hold back the tide of global economy by closing borders can be a huge strategic error due to a mistaken point of view by small and medium enterprises who fear to grow and to go international. To accept this point of view and to share the idea of guaranteeing a little of "healthy protectionism" only delays the moment in which the market claims its *redde rationem*… as the experience of Japan seems to suggest.

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