

The 1986 trend for raw materials and products

THE PLASTICS MARKET IN ITALY

Italian plastics production appears levelled-off at about 2.5 million tons per year. Italian chemical industry has improved considerably its profitability but at the detriment of capacity and market shares. The trade balance has in fact worsened during 1986.

Overall demand, on the contrary, grew for the fifth subsequent year. The demand level over the first half of the year has been rather disappointing, with an intake 1-2% below the 1985 average. Demand growth had a sharp recovery during Q3 of 1986, in particular September showed a + 15-20% increase for most products. Sales remained good in October and first half of November and consolidated data for 1986 could well be higher than shown in the relevant table.

Packaging

Packaging applications are by far the most important outlet for plastics, accounting for about 40% of total demand. There are many threats to future development. Italian Ministry of Industry is determining in which cases non-biodegradable carrier packaging (shopping bags and similar products) will be banned starting in 1991. Several local authorities have decreed that plastic bottles are forbidden within their boundaries.

Both actions originate from the bad image that plastics have with Italian authorities.

A third, less important, hindering factor is the widespread usage of reclaimed materials (this affects consumption of new resin only) while the increased penetration of LLDPE, HDPE and polypropylene causes film downgaging (especially with coextrusion) and more generally weight saving in most applications.

Building and construction

This represents 13-14% of total

demand. Building activity is very depressed in Italy, in quality and quantity terms, since many years. Plastics still play a minor rôle in building. They reached a good penetration in a very few applications (pipes, some profiles) while in most other end-uses demand remains well below the potential deriving from the price/performance ratio (insulation, water-proof lining, roofing, cladding, glazing etc.). Total consumption still represents a marginal share (1-2%) of total building costs.

Pre-fabrication, or at least standardization of building components, is not a common practice in Italy. This compounded with the fact that most building activities are carried out by very small companies (using very traditional systems) while there is a definite lack of quality control and scarce observance of existing laws, results in a difficult market for plastics parts. Most growth is recorded in non residential building, that is construction of infrastructures (water-mains, sewage systems, gas pipelines etc.) and plants, industrial and office buildings or large international export contracts which also involved exports of manufactured goods (pipes, profiles, sheets etc.).

Agriculture

This outlet accounts for about 7% of plastics demand. Altogether Italy has the largest plastic consumption per utilized agricultural land, that is 14.5 kg/ha, among Mediterranean countries but the lowest consumption per inhabitant (3.6 kgs pro-capite).

The largest share of demand is accounted for by crop protection (greenhouses, tunnels, mulching etc.) followed by irrigation. Land drainage is still at a very early stage of development.

Automobile

This industry represents ano-

| RAW MATERIALS IN ITALY (1000 TON) | 1983 | 1984 | 1985 | 1986 (estimate) |
|-----------------------------------|--------|--------|--------|-----------------|
| PRODUCTION | 2,390 | 2,485 | 2,430 | 2,490 |
| IMPORT | 950 | 1,025 | 1,230 | 1,315 |
| EXPORT | 820 | 850 | 815 | 855 |
| CONSUMPTION | 2,520 | 2,660 | 2,845 | 2,950 |
| YEARLY GROWTH RATE (%) | + 6.6% | + 5.6% | + 7.0% | + 3.7% |

ALL THERMOPLASTICS INCLUDED WITH THE EXCLUSION OF RECYCLED MATERIALS AND THE ADDITION OF A SELECTED GROUP OF THERMOSETS DESTINED TO PLASTICS PROCESSING

| THERMOPLASTICS IN ITALY (1000 TON) | 1983 | 1984 | 1985 | 1986 (estimate) |
|------------------------------------|--------|--------|--------|-----------------|
| PRODUCTION | 2,090 | 2,175 | 2,110 | 2,160 |
| IMPORT | 935 | 1,010 | 1,210 | 1,300 |
| EXPORT | 755 | 780 | 750 | 780 |
| CONSUMPTION | 2,270 | 2,405 | 2,580 | 2,680 |
| YEARLY GROWTH RATE (%) | + 6.8% | + 5.9% | + 7.3% | + 3.9% |

| CONSUMPTION OF MAIN THERMOPLASTICS IN ITALY (1000 TON) | 1983 | 1984 | 1985 | 1986 (estimate) |
|--|-------|-------|-------|-----------------|
| POLYETHYLENE | 841 | 895 | 965 | 1,000 |
| POLYPROPYLENE | 355 | 375 | 410 | 430 |
| PVC | 610 | 630 | 675 | 690 |
| POLYSTYRENE | 261 | 273 | 275 | 282 |
| ENGINEERING POLYMERS | 85 | 103 | 113 | 130 |
| OTHER PLASTICS | 118 | 129 | 142 | 148 |
| TOTAL | 2,270 | 2,405 | 2,580 | 2,680 |

| THERMOSETS MARKET IN ITALY (1000 TON) | 1983 | 1984 | 1985 | 1986 (estimate) |
|---------------------------------------|--------|--------|--------|-----------------|
| PRODUCTION | 302 | 312 | 320 | 332 |
| IMPORT | 11 | 12 | 13 | 14 |
| EXPORT | 61 | 67 | 70 | 74 |
| CONSUMPTION | 252 | 257 | 263 | 272 |
| YEARLY GROWTH RATE (%) | + 4.1% | + 3.6% | + 2.3% | + 3.4% |

THERMOSET MOULDING POWDERS, UNSATURATED POLYESTERS AND EPOXIES FOR PLASTIC USES ONLY, POLYURETHANES (FOAMS + TPU)

THE ITALIAN PLASTICS PROCESSING INDUSTRY

| STRUCTURES AND FIGURES | 1984 | 1985 | GROWTH RATE (%) |
|------------------------|--------|--------|-----------------|
| COMPANIES (NUMBER) | 4,500 | 4,900 | + 8.9 |
| FACTORIES (NUMBER) | 4,800 | 5,300 | + 10.4 |
| EMPLOYEES (NUMBER) | 95,000 | 96,000 | + 1.1 |
| SALES (BILLION LIRE) | 9,000 | 10,000 | + 12.4 |
| ADDED VALUE/SALES | 46% | 47% | |

PRODUCTION BY TECHNOLOGY (%)

| | 1984 | 1985 |
|-----------------|------|------|
| EXTRUDED — FILM | 26.5 | 27 |
| — SHEET | 4.5 | 5 |
| — PIPE | 8 | 10 |
| — PROFILE | 5 | 5 |
| — OTHER | 3 | 2 |

| | | |
|--|------|-----|
| SUBTOTAL EXTRUSION | 47 | 49 |
| INJECTION MOULDED PARTS | 25.5 | 25 |
| BLOW MOULDED PRODUCTS | 5.5 | 6 |
| CALENDERED FILM & SHEET AND COATED FABRICS | 8.5 | 7 |
| OTHERS | 13.5 | 13 |
| TOTAL PLASTICS ITEMS | 100 | 100 |

The union between Sandretto and Metalmeccanica Plast

An Italian giant is born...

From February 18 of this year Sandretto Industrie and Metalmeccanica Plast formed a joint company, thus creating a group that according to estimates, produces over 43% of the injection moulding machines manufactured in Italy and has a solid basis of 32 billion lire annual invoiced sales from the Como company and some 130 billion from the Turin company in 1986.

Possibly this is not the first instance of a union to be carried out in this industry in Italy but it is certainly the most outstanding.

This move involves two of the leaders in this particular field who together now occupy an indisputable leading position with regard to other Italian competitors as far as market share is concerned and who will be able to compete with the major foreign groupings.

It is this "European" dimension that the two companies have adopted and which they intend to emphasise.

As a result the investments in research and development that are required to meet competition and the resources needed to offer users the super automated factories in the near future are now within the reach of this new group.

The individuality that is typical of the small and medium sized Italian companies has been put to one side by the management of Metalmeccanica Plast who have preferred to transfer their majority shareholding to the Sandretto family in order to increase the company potential and to continue to be present on the world market by means both of an active participation and intention.

On the other hand Sandretto must be given credit for having known how to increase the overall productive capacity by combining their own actual strength with that of a well known and competent competitor without falling into the temptation of

continuing any form of duplication.

The four main objectives of the move have been clearly set out both in a press release and in a communication to the customers:

- the joint consolidation of two competitive market situations, with both companies holding a very prestigious position;
- economy of scale and synergy: the 1987 budget which provides for the building of 1300-1400 injection moulding machines with an invoice value of 200 billion lire will permit savings to be made and will provide investment resources. The major synergy will occur in the technical, administrative and financial fields;
- research and development and automated factories. Flexible moulding systems already in operation carry out all the operations without any human intervention. Nonetheless human resources and financial means are needed to utilise this situation to the full. Sandretto and Metalmeccanica Plast will be employing some 100 technicians on research and will be investing over 7 billion lire annually in this direction;
- market presence. The two companies operate five branches in Europe and are represented in 75 countries throughout the world.

The two companies have emphasised that the corporate name, trade marks, production units and sales networks will continue to exist as separate entities but will be able to profit from their reciprocal experience. Possibly at a later date there will follow a more precise delineation in technology and markets, something for which we shall have to wait and see...

| COMPANY DETAILS | SANDRETTO INDUSTRIE | METALMECCANICA PLAST |
|--------------------------------------|---------------------|----------------------|
| 1986 TOTAL TURNOVER (billion lire) | 130 | 32.5 |
| EXPORT (billion lire) | 71 | 17 |
| TOTAL EMPLOYEES (n.) | 680 | 260 |
| R & D STAFF (n.) | 77 | 25 |
| R & D INVESTMENTS (billion lire) | 5.2 | 1.6 |
| FACTORIES (n.) | 4 | 2 |
| TOTAL COVERED AREA (m ²) | 57,000 | 20,000 |
| FOREIGN BRANCHES (n.) | 3 | 2 |
| FOREIGN REPRESENTATIONS (n.) | 45 | 30 |



Another synergy

Following on the "marriage" to which we refer above here is another that emerges... a triangle, in fact.

It is just at this moment that the news has been published of three Italian manufacturers (Lorenzin-Ottogalli-Union) who are leaders in the production of machinery for the shoe industry on a national and international scale. The three companies have reached an agreed assessment of the market in which they operate as being one that will offer more and more a committed challenge requiring an adequate and rapid response.

Based on this conclusion the three industrial groups have therefore decided to create a mixed participation working group with the objective of pinpointing and effecting a cooperative action by means of agreed policies both in research, development and engineering (this will also extend to possible new areas of diversification) productive operations, means and support for sales promotion and operating methods. In order to give a more concrete form to these objectives a reciprocal share participation has been arranged to effect the synergy and strengthen the asset structure and overall financing in view of future developments.

ther 7% of total demand. Penetration rate has been impressive over last few years. The average Italian car had only about 60 kgs of plastics per vehicle in 1979 while the current level is approximately 95 kgs per car (or about 12% of the total weight and 30% of the total volume). New Fiat and Alfa-Lancia models largely exceed 100 kgs of plastics per vehicle.

Electrical appliances

These outlets account for a further 4% of the demand. Plastics penetration is virtually complete in large household appliances as far as the basic design remains unchanged. There is hope that once overcame the 1985 crisis the industry will resume research regarding metal replacement with plastics in large structural parts (i.e. refrigerator housing of plastic drums for washing machines), thus giving a new impetus to plastic demand development. On the contrary penetration in small appliances is still underway, especially for heat resistance resins.

Furniture

Furniture represents 4% of total plastics consumption, but plastics have still a low penetration in furniture with no more than 5-6% of total raw materials consumed by this industry. The usage of plastics is narrowed down to mass produced articles but while the adroit design of "all-plastic" furniture

made it acceptable to the public for some time, fashion changed and today the "plastic-look" appears out-of-date. Best growing polymers are therefore those with "non-plastic" look (i.e. polyamides) or paintable grades (i.e. PUR or PP).

The processing industry

The Italian plastics processing

industry increased in terms of number of companies, as well as of average production per company and even more per employee.

Economics did not improve as much. The price per kg of plastic manufactured goods decreased in real terms by about 4% during 1985.

A production breakdown by manufacturing technology is given in the relevant table, expressed as percentage of fabricated parts weight. It can be seen how extrusion now accounts for close to one half of the total output, despite only 20% of the companies are active in this sector.

A last mention can be made to the fact that the largest plastic processor at present is the Fiat group, acting both directly and through subsidiaries and associated companies.



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Final balance

After the estimate reported on the latest issue (February) of our magazine, complete official statistics are now available for the Italian market of plastics and rubber processing machinery as well as of plastic products. The data issued by ASSOCOMPLAST (Association of Italian manufacturers of plastics and rubber machinery)

| ITALIAN MARKET OF PLASTIC PRODUCTS (MILLION LIRE) | EXPORT 1986 | % DIFF. 86/85 | IMPORT 1986 | % DIFF. 86/86 |
|--|-------------|---------------|-------------|---------------|
| FLEXIBLE PVC PIPES | 6,371 | + 5.5 | 5,224 | + 39.7 |
| OTHER PVC PIPES | 8,064 | + 0.3 | 5,840 | + 6 |
| TABLEWARE AND KITCHEN UTENSILES | 33,087 | + 7.2 | 20,466 | + 8.4 |
| TABLES AND COVERS FOR W.C. | 22,128 | + 15 | 468 | - 6.3 |
| WASH-BASINS, BIDETS, TUBS | 7,187 | -10 | 4,630 | + 35.6 |
| OTHER SANITARYWARE PRODUCTS | 24,239 | - 2.4 | 21,025 | + 41.5 |
| ORNAMENTAL PRODUCTS | 17,814 | - 6.7 | 9,237 | + 41 |
| OFFICE AND SCHOOL PRODUCTS | 5,443 | +37.6 | 12,484 | + 5.3 |
| CLOTHING ARTICLES | 7,289 | +66.2 | 14,999 | + 15.1 |
| PRODUCTS FOR SPACE LIGHTING | 12,018 | +20.3 | 7,585 | + 40.9 |
| OTHER LIGHTING PRODUCTS | 11,958 | - 6.6 | 7,218 | + 69 |
| SYNTHETIC CATGUTS | 5,625 | +76.2 | 10,902 | +167.2 |
| PE BAGS AND CONTAINERS | 84,075 | - 5.9 | 10,354 | - 28.9 |
| PVC BAGS AND CONTAINERS | 7,482 | -24.1 | 2,190 | + 38.5 |
| OTHER BAGS AND CONTAINERS | 42,278 | +34.1 | 13,586 | + 12.2 |
| TUBULAR NETS | 1,624 | + 6.3 | 1,284 | + 66 |
| BOXES, VASES, CASES, CRATES | 43,850 | + 0.1 | 23,458 | + 31.2 |
| DEMIJOHNS AND BOTTLES (UP TO 2 LITRES) | 11,026 | -19.4 | 9,208 | + 4 |
| DEMIJOHNS AND BOTTLES (OVER 2 LITRES) | 8,022 | +91.5 | 4,657 | + 91.2 |
| BOTTLE CLOSING CAPS | 17,565 | + 1.7 | 4,892 | + 6 |
| CAPS, LIDS, CLOSING ITEMS | 4,019 | +16.4 | 5,799 | + 39.2 |
| OTHER PACKAGING ITEMS | 6,890 | +16.1 | 4,649 | + 29.9 |
| ROLLING SHUTTERS AND PARTS | 3,728 | - 0.7 | 1,742 | + 16.2 |
| ACCESSORIES FOR PIPES | 23,073 | -13.4 | 18,202 | + 14.8 |
| COILS, TUBES, SHUTTLES, REELS FOR SPINNING/WEAVING | 7,519 | -16.7 | 1,502 | - 22.4 |
| PROFILES FOR FURNITURE, WINDOWS, CAR-BODIES | 2,926 | -37.9 | 9,484 | +504.4 |
| ARTICLES FROM SHEETS | 3,883 | -30.2 | 5,707 | + 25.2 |
| OTHER PRODUCTS | 1,065,133 | + 10.5 | 349,653 | + 8.2 |
| TOTAL | 1,494,316 | + 7.9 | 586,445 | + 14.7 |

show a positive trade balance once more for both sectors.

As far as the machinery export is concerned, it exceed, 1,000 billion lire (50% of the global production in terms of value) with a 10.8% increase in respect of the previous year.

A 14.8% increase on the contrary was recorded in terms of weight.

The overall exports of Italian plastics products exceeded 1,400 billion lire with a 7.9% increase in monetary terms with regard to 1985.

Having a look to the various destinations of the Italian exports, we can note that France remains the top market for machinery (23% of total exports), whilst Canada occupies the same position for the plastic products.



| ITALIAN MARKET FOR PLASTICS AND RUBBER MACHINERY (1986) | EXPORT | | | | IMPORT | | | |
|---|--------------|-----------|--------|--------|--------------|---------|-------|-------|
| | MILLION LIRE | | TONS | | MILLION LIRE | | TONS | |
| | 1985 | 1986 | 1985 | 1986 | 1985 | 1986 | 1985 | 1986 |
| CALENDERS & LAMINATORS | 10,095 | 7,393 | 484 | 2,367 | - | 348 | - | 7 |
| VULCANIZING PLANTS | 3,041 | 2,808 | 210 | 187 | 861 | 1,464 | 52 | 30 |
| INJECTION MOULDING MACHINES | 212,811 | 242,666 | 17,487 | 20,731 | 17,012 | 36,289 | 1,052 | 1,793 |
| EXTRUDERS | 96,055 | 128,210 | 4,208 | 5,811 | 17,313 | 22,065 | 488 | 604 |
| COMPRESSION & TRANSFER PRESSES | 24,129 | 19,613 | 1,705 | 1,778 | 7,298 | 4,201 | 252 | 358 |
| OTHER PRESSES | 54,343 | 47,879 | 4,243 | 3,782 | 7,347 | 12,434 | 529 | 749 |
| MACHINES FOR FOAM PRODUCTS | 16,032 | 16,035 | 656 | 624 | 686 | 2,885 | 34 | 125 |
| THERMOFORMING MACHINES | 8,234 | 10,642 | 380 | 483 | 860 | 5,993 | 50 | 155 |
| BLOW MOULDING MACHINES | 14,376 | 14,748 | 598 | 601 | 13,678 | 21,184 | 388 | 394 |
| INTERNAL AND ROLL MIXERS | 12,923 | 7,086 | 1,068 | 640 | 1,413 | 4,863 | 126 | 181 |
| GRINDERS | 7,572 | 4,824 | 595 | 340 | 948 | 933 | 30 | 19 |
| OTHER MACHINES | 126,290 | 156,735 | 7,124 | 7,838 | 21,595 | 31,820 | 718 | 1,433 |
| PARTS OF MACHINES | 141,518 | 136,744 | 6,528 | 6,886 | 38,752 | 41,930 | 2,134 | 1,465 |
| INJECTION & COMPRESSION MOULDS | 87,614 | 102,796 | 2,898 | 3,436 | 17,634 | 18,382 | 771 | 862 |
| OTHER MOULDS | 160,810 | 182,870 | 6,096 | 6,817 | 16,346 | 20,609 | 773 | 875 |
| TOTAL | 975,843 | 1,080,849 | 54,280 | 62,321 | 161,863 | 225,400 | 7,397 | 9,070 |

The PVC story goes on

RESTRUCTURING FOR INTEGRATION

Developing nations in the Middle East and the Pacific Rim have come to play a significant role in the international PVC market. This is the opinion of H.E. Ibrahim A. Salamah, vice chairman and managing director of Saudi Basic Industries Corporation (SABIC) expressed in a recent press conference.

In Saudi Arabia, natural gas is now upgraded into valuable PVC resins and intermediates, much of it for export to the nations of the Pacific Rim. In these countries, where abundant labour constitutes a natural resource, imports of PVC resins and intermediates from Saudi Arabia, Western Europe, and the United States are fabricated into finished goods for export to consuming nations throughout the globe.

According to Salamah, this shift in PVC supply and demand patterns seems to have caused some analysts to underestimate the vigour of the PVC industry in developed nations. The recent surge in Far Eastern

fabricated PVC imports to the United States in 1985 - 500,000 tons roughly 16% of total US resin consumption - should not obscure the fact that the US PVC industry has grown significantly during the past decade. U.S. PVC consumption has been 3.5 million tons in 1985: compared with 2.37 million tons in 1977, a 3.4% average annual growth rate. When imports are added to these figures, the total domestic market for PVC products shows an average annual growth of 5.1%, more than double the rate of GNP. And when exports of PVC intermediates are considered, the picture gets even brighter: an average annual growth rate of 12.1% for ethylene dichloride (EDC) and 11.6% for vinyl chloride monomer (VCM) from 1977 to 1985.

North America and Western Europe exported a total of 487,000 tons of VCM and, together with Saudi Arabia, 872,000 tons of EDC to the Pacific Rim in 1985. These exports accounted for

roughly 11% of Japan's EDC and VCM needs, 49% of South Korea's and 25% of Taiwan's. Without them, Pacific Rim nations could not exploit their low labour cost advantage and compete effectively in the global market for PVC products. Demand for PVC products will continue to rise in both developed and developing nations, Salamah predicts. How that demand will ultimately be satisfied will be determined by an increasingly efficient international market.

INTEGRATED PVC INDUSTRY

And with these perspectives the world PVC industry is changing deeply its structures: producers are restructuring to become low cost manufacturers. In the past year alone, the PVC industry has been shaken by several major acquisitions, mergers and rationalisations. Occidental Chemical became the second largest US producer (capacity 610,000 tons/year) af-

ter it acquired the PVC business of Tenneco. Occidental also shored up its feedstock position when it purchased the chemical operations of Diamond Shamrock, which included capacity for 1,2 million tons/year of chlorine and 450,000 of ethylene dichloride (EDC).

Imperial Chemical Industries and EniChem merged their vinyl operations to form European Vinyl Corporation (EVC), the world largest PVC producer. Even after a proposed shutdown of 300,000 tons/year of inefficient capacity, EVC's nameplate will still total 1 million tons of PVC and 1,2 million of vinyl chloride monomer (VCM).

Japanese producers, at a competitive disadvantage due to high feedstock cost, pushed through a new rationalization program, guided by the Ministry of International Trade and Industry (MITI). Between 1980 and 1986, Japan reduced PVC capacity 31% to 2.5 million tons, and VCM capacity 23% to 2.1

