OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.

DISCLAIMER

FAIR USE POLICY

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

18388

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

UNITED NATIONS CENTRE FOR HUMAN SETTLEMENTS (HABITAT)

SECOND CONSULTATION ON THE BUILDING MATERIALS INDUSTRY

Athens, Greece, 4–8 November 1991

Distr.
LIMITED

ID/WG.510/4
19 September 1991

ORIGINAL: ENGLISH

21 p.

FROM CENTRAL PLANNING TO MARKET SYSTEMS: IMPLICATIONS OF ECONOMIC REFORMS FOR THE CONSTRUCTION AND BUILDING INDUSTRIES*

Prepared by

David E. Dowall**

* The views expressed in this paper are those of the author and do not necessarily reflect the views of the Secretariat of the United Nations Industrial Development Organization (UNIDO). Mention of firm names and commercial products does not imply the endorsement of UNIDO. This document has not been edited.

** Professor of City and Regional Planning, University of California at Berkeley.

V.91-28936

Introduction

The purpose of this paper is to review and outline the implications of widespread housing market reforms now underway in Eastern Europe and the Soviet Union for the construction and building materials industries. The housing production track record in most of these countries has been disappointing, production has not matched demand, and housing shortages have sharply escalated. Housing market reforms promise to dramatically alter the structure and performance of residential construction enterprises, building materials producers and, suppliers. At present very little research is being conducted which assesses the various options for industrial restructuring, especially assessments of various privatization, reorganization, and liquidation options. UNIDO can and should focus attention on this important topic. This paper is exploratory, attempting to identify critical issues on which UNIDO should target its research and technical assistance agenda for the 1990s.

By all measures, housing conditions in Eastern Europe and the USSR are going from bad to worse. After a decade of economic slowdown, 1990 ushered in a spectacular 11 percent decline in Eastern Europe's industrial output. Housing production is plummeting as economic hardships repress consumer demand, macroeconomic retrenchment cuts state-funded housing construction, and rising inflation pushes up construction costs. The massive housing shortages of the 1980s are worsening in most of the Eastern Block and the Soviet Union. It is of paramount importance that housing market reforms in Eastern Europe and the Soviet Union succeed. Improvements in the housing delivery systems of these countries will not only lead to correcting persistent housing shortages and improving the quality of life for millions of households, but they will also help to promote improved economic performance [Renaud, 1991]. A more efficient housing market can improve labor mobility and help speed the process of economic transition between regions and sectors [Mayo and Stein, 1988]. A well-functioning housing market can promote the creation of an efficient and innovative financial sector. The reduction of housing subsidies can reduce public expenditures and lessen inflationary pressures [Telgarsky and Struyk, 1990].

As macroeconomic reforms continue in Central and Eastern Europe, central government financing of housing production by state enterprises is diminishing, causing a drop in housing production. The process of housing market reforms is extremely complicated, and most initiatives have started by creating new channels for the mobilization of credit for construction finance, restructuring of property rights, and reform of the highly subsidized system of rents. As these new systems of housing finance are established, housing and building materials production systems need to be transformed from highly centralized production-oriented systems into highly decentralized demand-oriented industries capable of responding to changing consumer demands [Matras and Renaud, 1991].

While there are signs that the reforms are starting to stimulate structural change in the construction and building materials sectors in some countries (Hungary and to a lesser extent Poland), in other countries (Bulgaria and the USSR) there has been little change. An obvious question to ask is why the uneven effects to date? and what can be done to facilitate the structural transformation of construction and building materials industries? Unfortunately there is little research to consult which considers how to efficiently transform large centralized production-oriented enterprises into small decentralized demand-driven firms.

There are considerable barriers to effective restructuring, the most notable one being the enormous difficulties small-scale entrepreneurs face in operating in markets still dominated by large state-owned-enterprises (SOEs) with preferential access to materials, credit, and land. As Matras has pointed out: there are substantial problems facing the emergence of new private housing developers: 1) temporary weakened demand for housing; 2) a residual monopolistic housing construction and building materials industry; 3) unequal access to scarce input materials; 4) a lack of appropriate institutions and procedures to operate under new conditions; and 5) the need for new professionals to manage housing and building materials production companies [Matras, 1991]. The following section of this paper surveys past and current housing production trends in Eastern Europe and the Soviet Union.

Housing Conditions in Eastern Europe and USSR

During the post-war period, the share of housing investment in Eastern European nations and the USSR has been well below that found in western, market economies. This pattern, illustrated in Table 1, reflects the priority of centrally planned economies of channeling investment into "productive" sectors. During the 1950s and 1960, housing construction in terms of dwelling unit completions per 1,000 of population averaged one-half of that found in European market economies. During the 1970s, political and economic conditions favored the increased production of

Table 1

Share of Housing Investment in Total Investment Outlays

	East Germany	Hungary	Poland	USSR
1955	13.1	21.8	15.1	18.9
1965	9.2	16.3	16.1	16.9
1970	6.8	15.9	13.8	16.4
1971	7.2	17.3	13.9	16.0
1972	8.2	18.7	13.2	15.5
1973	8.8	18.6	13.5	15.3
1974	8.9	18.3	13.1	14.7
1975	9.0	17.6	13.5	14.2
1976	9.3	17.2	13.9	14.0
1977	9.1	17.2	14.9	13.9
1978	10.0	16.1	16.1	13.5
1979	10.2	16.1	19.4	13.3
1980	10.6	17.8	22.2	14.0
1981	11.0	17.9	22.5	14.4
1982	11.1	19.0	24.9	14.8
1983	11.7	19.5	25.4	15.1
1984	12.4	21.5	23.6	15.7
1985	12.9	21.1	22.7	15.6
1986	13.1	20.7	21.7	15.9
1987	n/a	18.9	23.2	n/a

Source: Matras, 1991.

housing, and output reached uniformly high levels. However, in Poland and Hungary, high rates of inflation in the construction sector dramatically pushed up housing costs. Thus, higher rates of investment in housing in Hungary and Poland did not lead to similar increases in housing construction. In the USSR, increased housing investment during the early 1980s was actually associated with a decline in physical housing production. By the mid-1980s, economic conditions deteriorated and investment in housing precipitously fell [Matras, 1989].

Housing production and demand trends reveal that most Eastern European countries as well as the USSR have and continue to suffer from severe shortages of housing. Table 2 illustrates these shortages for selected countries. In 1986, shortfalls of housing ranged from a low of 6.6 percent of housing stock in Hungary to 30.2 percent in the USSR. In virtually all countries, housing shortages are orders of magnitude larger than what is found in other market economies with similar levels of income. Most of the housing shortages occur in urban areas, where workers are concentrated and where the housing delivery system is more dependent on state-owned-enterprises for housing production.

These shortages have caused considerable crowding. On average there are 3.0 persons per housing unit in Eastern Europe versus 2.2 in West Germany. The units are smaller, 26.2 square meters per person -- a mere 58 percent of the West German average. Within Eastern Europe, conditions vary considerably. In Poland and Yugoslavia, conditions are far worse -- there are 3.5 persons per household, and the units are smaller, 21.5 square meters. While crowding has lessened and housing quality increased in some Eastern European nations, little improvement was recorded during the 1970s in Poland and Czechoslovakia.

The economic recession of the 1980s severely impacted housing production in Eastern Europe. Between 1980 and 1988, housing production per 1,000 population declined from 7.3 to 5.1 units [Telgarsky and Struyk, 1990]. Thus, the housing shortages reported in Table 2 have increased in most nations as production has failed to keep pace with population and household formations.

While macroeconomic conditions pushed down housing production in both the public and private sector, the declines were far greater in the public sector. Between 1980 and 1989, public housing production fell by between 26 and 83 percent in the five Eastern European nations listed in Table 3. Only in the USSR did public housing production slightly increase. Declines in private housing production ranged from 1.3 to 19 percent in the five Eastern European nations, and they increased by 26 percent in the USSR.

Since the 1960s, despite the overall shortage of housing, housing quality has dramatically improved. As illustrated in Table 4, crowding has receded (the stock of dwelling units per ,000 of population has increased). Newly built units are larger

Table 2

Estimates of Housing Shortage in Eastern Europe and USSR, 1986

Country	1986 Housing Shortage as a Percent of 1986 Total Housing Stock
Bulgaria	27.4
Czechoslovakia	15.3
East Germany	17.1
Hungary	6.6
Poland	23.9
Romania	14.0
USSR	30.2
Yugoslavia	23.9

Source: Sillince, 1990

Table 3

Total Housing Production in Eastern Europe 1980-89
in (000) of units

Public Housing Production 1980-89

Year	Bulgaria	CSFR	Hungary	Poland	USSR	Yugoslavia	Total
1980	56.5	101.8	34.6	161.4	1757.0	48.7	2160.0
1986	40.3	61.5	9.5	127.6	1860.0	45.2	2144.1
1987	45.3	60.2	9.8	131.0	2006.0	38.1	2290.4
1988	42.4	65.7	6.1	125.5	1934.0	36.3	2210.0
1989	26.2	64.4	5.9	95.2	1809.0	na	2000.7
Percent Change 1980-89*	-53.6%	-36.7%	-82.9%	-41.0%	3.0%	-25.5%	-5.2%

Private Housing Production 1980-89 (in 000)

Year	Bulgaria	CSFR	Hungary	Poland	USSR	Yugoslavia	Total
1980	17.7	32.4	54.5	55.7	247.0	88.1	495.4
1986	15.6	24.6	59.9	57.4	240.0	84.8	482.3
1987	18.3	24.8	47.4	60.4	259.0	82.2	492.1
1988	20.4	24.4	44.5	64.1	296.0	83.1	532.5
1989	14.4	26.8	45.6	55.0	310.0	na	451.8
Percent Change 1980-89*	-18.6%	-17.3%	-16.3%	-1.3%	25.5%	-5.7%	10.9%

Total Housing Production

Year	Bulgaria	CSFR	Hungary	Poland	USSR	Yugoslavia	Total
1980	74.2	134.2	89.1	217.1	2004.0	136.8	2655.4
1986	55.9	86.1	69.4	185.0	2100.0	130.0	2626.4
1987	63.6	85.0	57.2	191.4	2265.0	120.3	2782.5
1988	62.8	90.1	50.6	189.6	2230.0	119.4	2742.5
1989	40.6	91.2	51.5	150.2	2119.0	0.0	2452.5
Percent Change 1980-89*	-45.3%	-32.0%	-42.2%	-30.8%	5.7%	-12.7%	-2.6%

* Percent change figures for total and Yugoslavia are 1980-88.

Source: United Nations, 1991.

Table 4

Improving Quality of Centrally Planned Economies' Housing Stock

GDR					
1960	318	n/a	66	33	22
1970	355	55.0	82	39	39
1986	416	64.3	n/a	68	76
HUNGARY					
1960	277	n/a	22.7	16.1	17.0
1970	302	61.5	35.1	26.4	30.8
1987	366	n/a	77.7	67.2	73.7
POLAND					
1960	236	n/a	18.8	10.3	6.2
1970	248	54.3	47.3	32.9	29.5
1984	277	57.9	78.9	65.4	63.9
USSR 1/					
1960	n/a	n/a	n/a	n/a	n/a
1970	235	46.8	78.9	75.8	60.7
1980	252	55.5	91.8	89.7	82.8
YUGOSLAVIA					
1961	220	44.8	n/a	n/a	n/a
1971	245	49.6	33.6	26.2	24.5
1984	290	60.7	70.0	n/a	54.2

1/ Installations: urban housing stock only.

Source: Matras, 1989.

and they have better amenities, such as piped water, indoor plumbing, and private baths or showers.

On the other hand, there are serious problems with the quality of new housing construction, particularly units built by industrialized large panel systems. Panel systems have come under attack for their poor sound-proof features and for being difficult to heat [McCutcheon, 1989]. Incidents of poor quality control and inspection abound, and in some cases, completed units are unfit for occupancy despite the fact that they have been inspected and "approved." The following quote captures the essence of the quality problem:

> I seldom see my neighbors, but thanks to the excellent sound-conducting properties of the partitions, ceilings and floors, I know them all by their first names. I know immediately when my right-hand neighbor's baby has a tummyache in the morning.... I was imprudent enough to get a dog. The caretaker and the neighbor above have dogs. And the moment the caretaker's dog begins to bark, my Rex replies. They are soon joined by the neighbor's dog, and within two minutes the whole house seems to be barking [DiMaio, 1974, p. 90].

Poor quality and technological backwardness is common to most SOE-produced goods, not just those of housing firms. As a recent World Bank Discussion Paper comments: "despite massive investments in science education and technical training, socialist country SOEs have tended to be relatively poor technological innovators, and indeed they have tended to operate below existing technology frontiers [Lee and Nellis, 1990]

Another frequently mentioned problem with industrialized housing projects is their remoteness. Virtually all SOE-built projects are very large -- often exceeding several thousand units. In most cases they are located at considerable distances from employment centers and transit lines. These remote projects make commuting difficult and usually residents have trouble getting access to services. Unfortunately, this pattern will not change unless building technologies are altered. The fact is that these large-scale construction systems are not well-suited for small close-in vacant sites.

The problems of housing quality are widespread in these large-scale industrial-built projects throughout Eastern Europe and the USSR. Such projects are built by large production-oriented SOEs which until recently have not been concerned with consumer demands for quality. Consumers have had no choice but to take what was produced. The SOEs' sole objective has been to build housing to meet the production targets set by the state. Typically, SOEs to rush the completion of housing units in the fourth quarter to meet annual production targets. For example, in some republics of the USSR, over 50 percent of annual housing production is completed during the fourth quarter of the year.

Fourth-quarter-built housing units are of notoriously poor quality [Andrusz, 1984]. While these large-scale enterprises may have been appropriate for the massive production of housing to quickly close the housing shortage gap, they are certainly not the appropriate form of housing production to supply a consumer-driven housing market. The next section describes the structure of the housing production system in Eastern European and the USSR.

The Large-scale Socialist Building Industry

Reflecting the orientation of massive state intervention in the production of goods and services, housing delivery in most centrally planned economies has been dominated by large state-owned-enterprises. In most instances these companies operate as monopolies, dominating housing markets in metropolitan areas and regions. The supply system is driven by production targets, usually based on floorspace, not demand. There is little innovation in housing design, especially relating to user preferences, comfort, or livability.

Up until 1980, most housing in Eastern Europe was built by the public sector. As illustrated in Table 5, public provision of housing varies across Eastern Europe with Bulgaria, Czechoslovakia, Poland, and the USSR having the most socialized form of housing production. In contrast, the role of the state in Hungary and Yugoslavia is much less. In other centrally planned economies such as China, Cuba, Vietnam, and Algeria, housing is mostly provided by the state. Since the mid-1980s, housing market reforms in Eastern Europe have led to a marked decline in the public production of housing, especially in Hungary.

Perhaps the most direct manifestation of the massive state intervention in the housing delivery system is the domination of the residential construction industry by a few very large firms. It is not uncommon for one large vertically integrated firm to control housing delivery in a large city. In Leningrad, for example, one firm produces virtually all of the apartment flats. Even in China, where housing reforms have been underway for nearly a decade, usually 5 to 10 firms (all controlled by the local government) dominate the market [World Bank, 1991].

A near-universal pattern found in the housing delivery systems of centrally planned economies is the high level of concentration of production activities in a few enterprises. As illustrated in Figure 1, very large enterprises, those with more that 1000 employees, dominate the construction industry of Bulgaria, Czechoslovakia, Hungary, and Poland. These large firms, many of whom are vertically integrated enterprises, frequently monopolize the entire housing market of a metropolitan area. In sharp contrast, Figure 2 illustrates that in market economies, such as West Germany, Norway, the United Kingdom, and United States, the construction industry is highly decentralized, and between 45 and

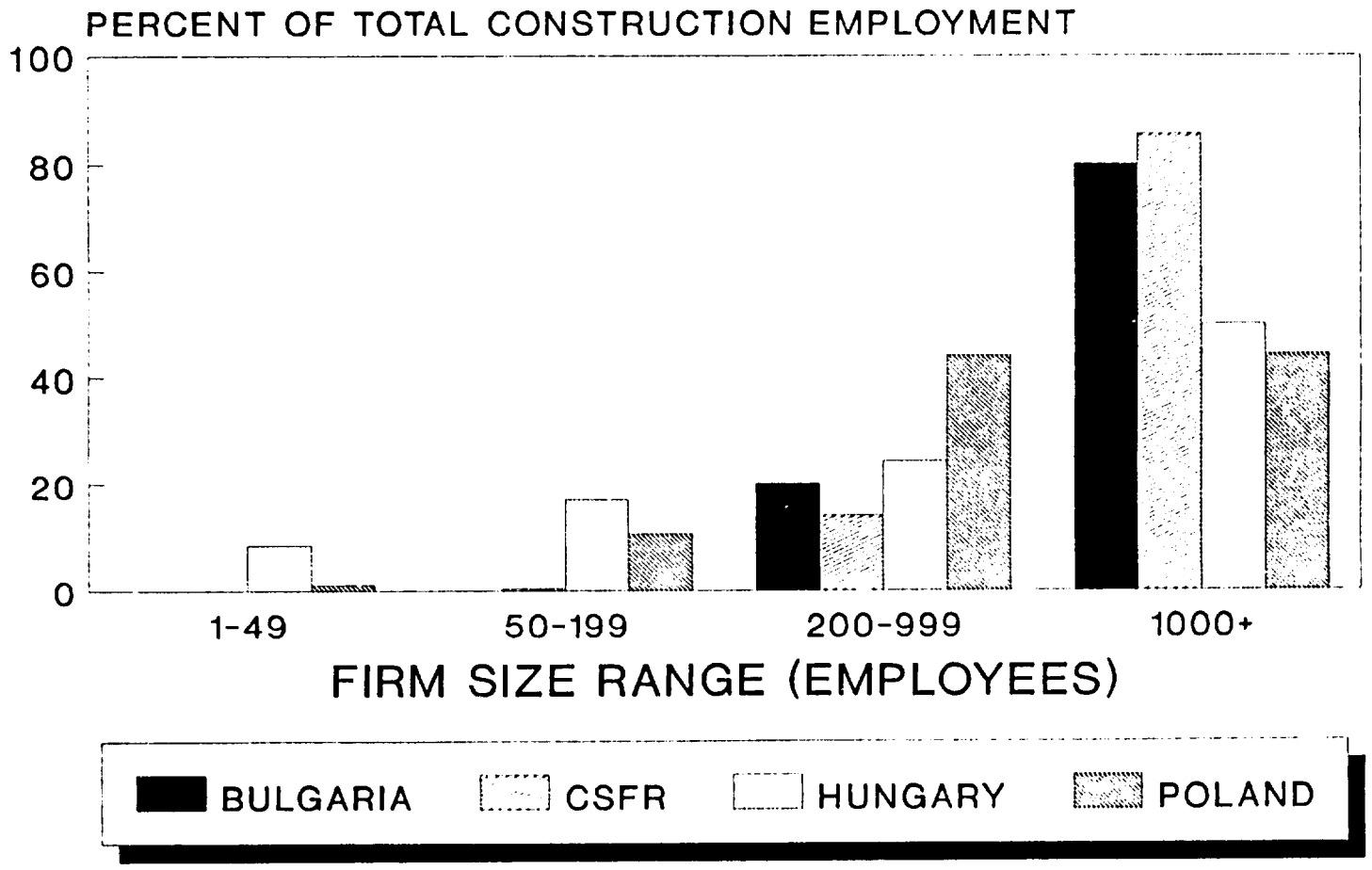
Table 5

Public Housing Production as a Percent of
Total Housing Construction
1980-1989 in (000) of units

Year	Bulgaria	CSFR	Hungary	Poland	USSR	Yugoslavia	Total
1980	76.1%	75.9%	38.8%	74.3%	87.7%	35.6%	81.3%
1986	72.1%	71.4%	13.7%	69.0%	88.6%	34.8%	81.6%
1987	71.2%	70.8%	17.1%	68.4%	88.6%	31.7%	82.3%
1988	67.5%	72.9%	12.1%	66.2%	86.7%	30.4%	80.6%
1989	64.5%	70.6%	11.5%	63.4%	85.4%	na	81.6%

Source: United Nations, 1991.

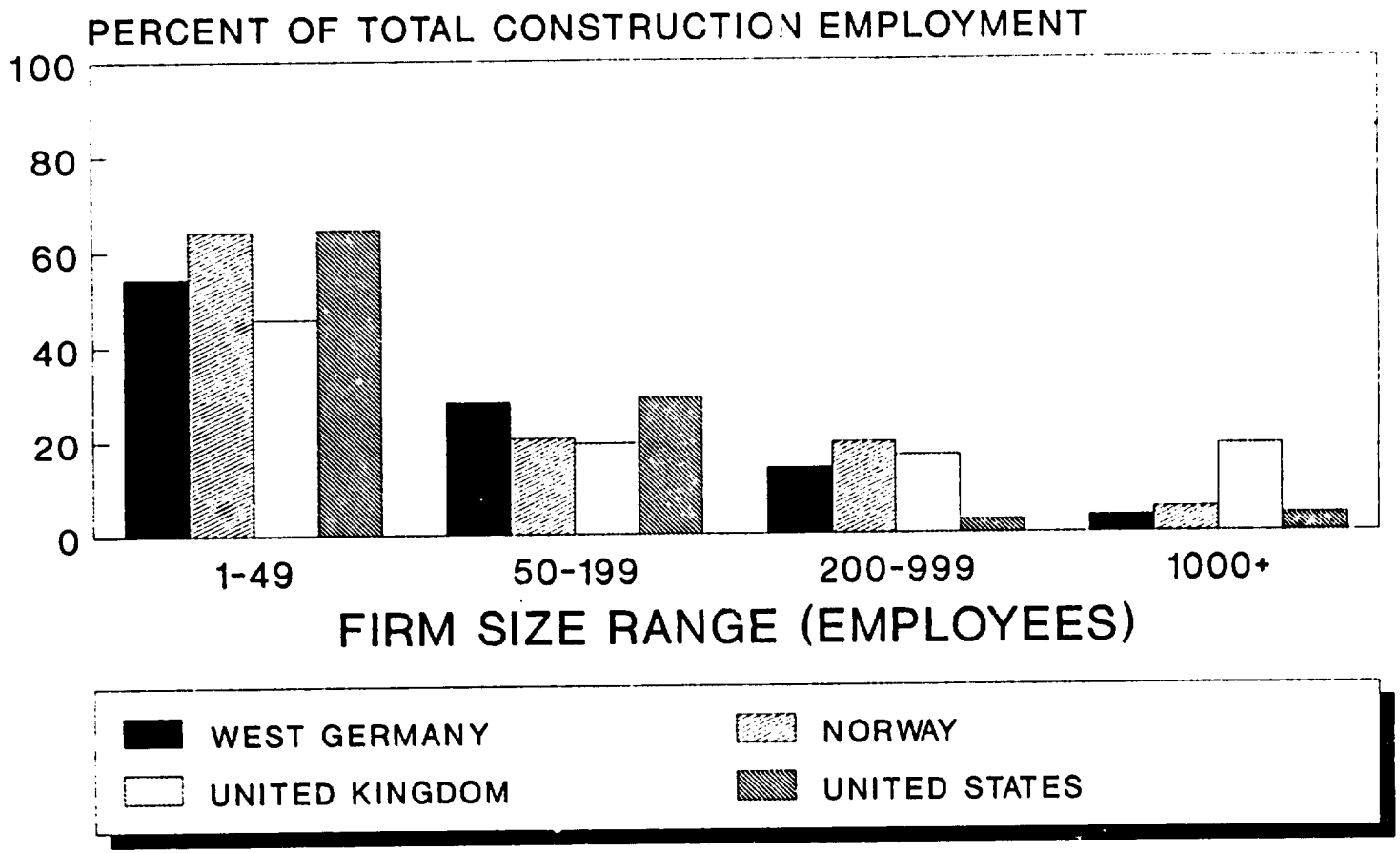
STRUCTURE OF CONSTRUCTION INDUSTRY
SHARE OF EMPLOYMENT BY FIRM SIZE, 1989



SOURCE: UNITED NATIONS, 1991.

Figure 1

STRUCTURE OF CONSTRUCTION INDUSTRY SHARE OF EMPLOYMENT BY FIRM SIZE, 1987-9



SOURCE: UNITED NATIONS, 1991.

Figure 2

65 percent of total construction industry employment is comprised of very small firms.

Concentrating such construction activities in the hands of these large firms is problematic [Hajduk, 1990]. They are production-oriented, tending to ignore consumer demand. The very large kombinats tend to concentrate on building technologies which are appropriate for largescale industrialized production and rely on inflexible one-model production aimed at maximizing economies of scale.

Efforts are under way to restructure the construction industry, making it more similar to that found in market economies (compare Figures 1 and 2). In Poland, reforms have been put in place and modest results are starting to show. In Hungary, similar reforms were launched, and the results, as of 1989, are dramatic. A brief sketch of the two nations' construction industries and the reforms are provided below.

A Profile of the Polish and Hungarian Housing Industries

The Polish construction industry provides a useful reference point for understanding the highly centralized structure of the socialist housing systems. Prior to 1981, construction decisions were controlled by the central planners, who made decisions about the allocation of funds to SOEs for housing production. All intermediary institutions followed the directives of the central planners, providing funds and building materials for project execution. All activities of the SOEs were centrally controlled, including type of product to be produced, quantity of production, output prices, wages, which building technologies to use, and how financial resources are used. SOE accounting and financial controls focused on determining compliance with these rules and regulations and provide little if any insights to the financial performance of the enterprises. No incentives existed to promote higher productivity, and unprofitable enterprises routinely received subsidies.

The state closely regulated contracts between SOEs and subcontractors. A socialist investor could only procure materials from other socialist enterprises. Little importance was attached to the prices of the subcontract materials or services, since parties faced only soft budget constraints. This process of subcontracting completely precluded small private firms from participating in the construction process of the SOEs. They were forbidden from entering into contracts with SOEs, and the SOEs received priority in the distribution of building materials and building sites.

In 1981, Poland initiated a variety of reforms intended to increase the low productivity of the construction sector. These included: limiting and eventually phasing out the use of command-distribution systems in favor of economic incentives

(pricing, interest rates, and taxes, etc.) and market mechanisms [Matras, 1989]. Much attention was given to decentralizing construction activities to better link local market conditions with decision-making. In particular; local authorities were given the right to establish housing construction enterprises, set credit policies and programs, and regulate housing development.

So far, the results of the reforms have been poor. Between 1981 and 1985, labor productivity in the residential construction sector has declined at an annual average of -0.6 percent [Matras, 1989]. It is generally perceived that there is still a morass of conflicting regulations which hinder the reform of the construction industry. Also, severe economic conditions have hampered construction activities.

Despite the fact that 1988 prices in the socialist sector became "contractual" (that is, based on negotiations between buyers and sellers), the soft budget constraints and market power have enabled SOEs to pass on cost escalations. Still no incentives exist for SOEs to lower costs or find more productive ways of combining inputs to produce housing.

More success has been achieved in promoting private sector activity. By 1989 there were signs that reforms aimed at increasing access to credit and building materials were working. According to the United Nations, the number of construction firms with fewer than 50 employees increased from 60 to 322, an increase of 262 firms between 1930 and 1989. Firms employing over 1,000 workers declined by 154 (see Table 6). However, despite the fact that laws baring linkages between SOEs and private firms have been abolished, cooperation is limited by the small size of private firms and their continuing difficulties in procuring building materials. Notwithstanding these barriers, the fruits of restructuring look promising: unit costs of private housing constructors is 30 percent lower than of the large kombinats. However, the private enterprises still lack adequate access to construction equipment and construction credit [Matras, 1989].

The role of the large state-owned enterprises in Hungary has been dramatically reduced. During 1989 and 1990, several of the very large kombinats discontinued operations. Commercial banks are suspending loans to unprofitable SOEs, and those remaining large kombinats are starting to become more responsive to market demands.

Medium-sized firms (those with between 50 and 199 employees) are starting to grow. This is in spite of the fact that firms are still having difficulties sourcing materials and securing building sites. One emerging pattern which is helping these firms, though, is the sharp increase in competitive bidding for construction projects. The share of contracts awarded by bid increased to 24 percent in 1988 from 3 percent in 1983. During

Table 6

Changes in the Structure of
Eastern European Construction Industry,
1980, 1986 1989

Size of Firm by Employment	Hungary				Poland			
				Percent Change				Percent Change
	1980	1986	1989	1980-89	1980	1986	1989	1980-89
Small (1-49)	4	322	1082	26950.0%	60	163	322	426.7%
Medium (50-199)	108	230	333	208.3	202	466	665	229.2
Large (200-999)	153	131	98	-35.9	721	804	741	2.8
Very Large (1000+)	70	58	48	-31.4	355	285	201	-43.4
Total	335	741	1561	366.0%	1338	1718	1929	44.2%

Source: United Nations, 1991.

1991, Hungary plans on promoting construction industry productivity by privatizing firms; liberalizing rules for the importation of building materials; and by providing assistance to builders and developers.

Conclusions: Reforming the Construction and Building Industry

The residential construction industries of centrally planned economies must be reformed to meet the demands of a free-market economy. Under the old system of central planning, property development is based on an allocation system, not on the demands of users. Accordingly, construction firms have responded to a variety of production signals, such as economies of large-scale production, systemization, and standardization. In many centrally planned countries this inevitably fostered the emergence of very large vertically integrated housing companies [McCutcheon, 1988].

In a market system, users (that is, demanders) will decide what types of properties to purchase and where, and the construction industry will need to adjust to these new demand pressures. This will mean more product diversity, emphasis on quality and price, and flexibility. In most western nations, housing developers are small, diversified, and flexible in terms of output and types of units produced.

The implications of shifting to a demand-driven system are enormous: large public housing companies need to be privatized, reorganized, or in some cases liquidated. The playing field must be made level, so that new private enterprises can enter housing markets and secure needed building materials, building sites, and construction financing.

There are numerous technological implications reflected in these reforms. The most obvious is that the large, highly centralized approaches to building construction are no longer appropriate. What technical process and building materials changes are necessary to facilitate the restructuring of highly centralized construction firms? Can other technologies such as factory-assembled building components be combined with site-built construction methods to encourage highly-decentralized and flexible building operations?

Construction technologies that were adequate for SOEs building 10,000 units per year will simply not work for smaller, more demand-oriented firms. Consequently, new building technologies which are more appropriate for smaller firms need to be introduced. The North American experience is particularly relevant on this point [Dowall, 1991]. Despite efforts to revolutionize the homebuilding industry by way of government programs such as "Operation Breakthrough," residential construction technology is still oriented to "site-built" methods. Manufactured housing or modular housing accounts for about 25 percent of annual housing

production. The remainder, 75 percent, is site-built, where a multitude of building materials are joined together to construct a housing unit. What is starting to happen is that, increasingly, more and more housing components are being assembled in factories and trucked to building sites. Builders are using factory-produced open- and closed-wall systems, pre-hung window and door systems, floor and roof trusses, and wet core bathroom systems. Figure 3 illustrates the extent to which builders are relying on factory-built housing components.

The overall structure of the residential construction industry in North America is highly decentralized. Most firms are small-scale and tend to operate in one geographic area. Larger firms which operate in several markets rely on decentralized and autonomous "profit-centers." Virtually all firms have very low overheads, making great use of sub-contractors to construct housing. With such low overheads, builders are better positioned to quickly respond to market changes.

As the Eastern European and USSR construction industry restructures itself, new more decentralized building technologies are required, and builders will need to develop market-oriented skills. Many of the firms that have been operating as large-scale kombinats should be privatized. Others should be reorganized to operate as decentralized profit centers.

The historical record for reforming state-owned construction enterprises is not bright. Through the 1960s and 1970s, major efforts have been made in virtually all SOEs to increase operational efficiency. In most cases, policies focused on decentralizing activities to the level of the firm, making them sensitive to prices, costs, and consumer demand. It was also argued that increased enterprise autonomy would lead to increased technological innovation [Lee and Ellis, 1990]. Reviews of these programs indicate that the reforms were partial in nature and did not go far enough, ignoring the basic lack of incentives provided by the socialist central planning framework and the prevalence of "soft-budget constraints."

In the future the principal path of reform will be on the privatization of the construction and building materials industry. This process will not occur overnight and it is technically and politically difficult [Cowan, 1990]. In the context of the construction industry, we simply lack experience on efforts to privatize or radically reorganize public corporations.

Given the urgency of housing market reforms in Eastern Europe and the USSR, UNIDO can and should take a leading role in research and technical assistance on how to best restructure construction and building materials industries. At a minimum, UNIDO should conduct research into:

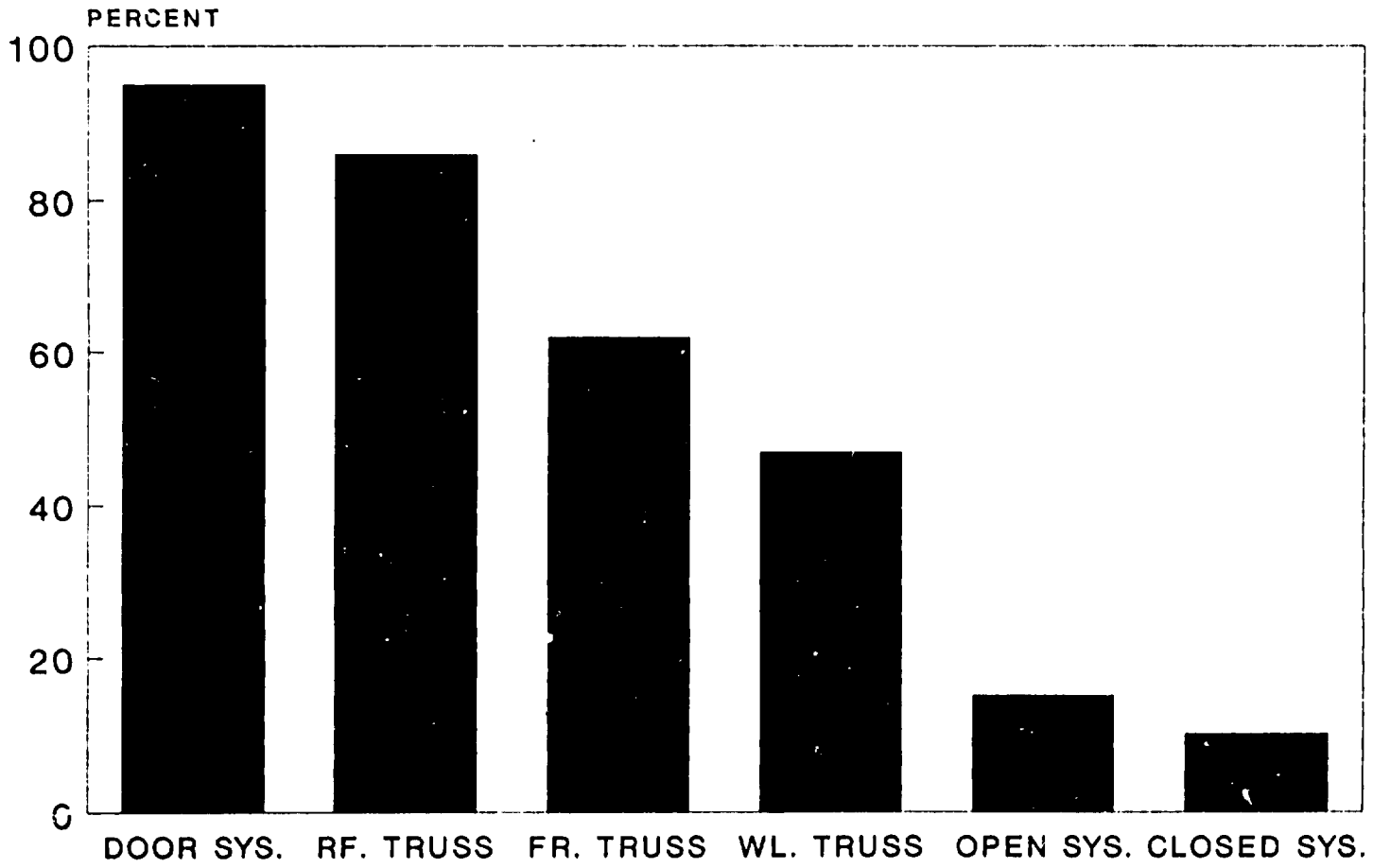
1) how to most efficiently reshape the size, ownership, and specializations of building enterprises;

2) what kinds of new technologies and new construction methods and building materials are best suited for a restructured construction and building materials industry;

3) what are the best methods for encouraging the application of these new technologies;

4) how should the procedures used by governments to provide land and finance capital to construction firms be changed to encourage the restructuring of the construction and building materials industry.

NORTH AMERICAN HOMEBUILDER'S USE OF FACTORY-BUILT COMPONENTS



NATIONAL ASSOC. OF HOMEBUIDERS, 1987

Figure 5

References

Andrusz, Gregory D. [1984] Housing and Urban Development in the USSR. Albany, NY: The State University of New York Press.

Cowan, L. Gray [1990] Privatization in the Developing World. New York: Greenwood Press.

DiMaio, Alfred John [1974] Soviet Urban Housing: Problems and Policies. New York: Praeger.

Dowall, David [1991] "An Overview of the North American Housing Production System," paper prepared for Seminar on Housing Policy Reforms in Eastern Europe, The Economic Development Institute of the World Bank. Prague, Czechoslovakia, May 1991.

Hajduk, Henryk [1990] "Restructuring of the House Building Industry in Poland," a paper prepared for Housing Reforms in Socialist Economies Policy and Research Seminar. The World Bank, June 12-13, 1990.

Lee, Barbara, and John Nellis [1990] "Enterprise Reform and Privatization in Socialist Economies," World Bank Discussion Paper 104. Washington: The World Bank.

Matras, Hanna [1989] "Structure and Performance of the Housing Sector of the Centrally Planned Economies: USSR, Hungary, Poland, GDR and Yugoslavia," Report INU 53. Washington: Infrastructure and Urban Development Department, The World Bank.

Matras, Hanna, and Bertrand Renaud [1991] "Housing Reforms in Central and Eastern Europe," paper prepared for Seminar on Housing Policy Reforms in Eastern Europe, The Economic Development Institute of the World Bank. Prague, Czechoslovakia, May 1991.

Mayo, Stephen K., and James I. Stein [1988] "Housing and Labor Market Distortions in Poland: Linkages and Policy Implications," Report INU 25. Washington: Infrastructure and Urban Development Department, The World Bank.

McCutcheon, R. [1989] "The Role of Industrialised Building in Soviet Union Housing Policies," Habitat International. Vol. 13, No. 4, pp. 43-61.

McCutcheon, R. [1988] "Industrialised House Building, 1956-1976," Habitat International. Vol. 12, No. 1, pp. 95-104.

Renaud, Bertrand [1991] "Housing Reform in Socialist Countries," paper prepared for Seminar on Housing Policy Reforms in Eastern

Europe, The Economic Development Institute of the World Bank. Prague, Czechoslovakia, May 1991.

Sillince, J.A.A. [1990] Housing Policies in Eastern Europe and the Soviet Union. London: Routledge.

Telgarsky, Jeffrey P., and Raymond J. Struyk [1990] Toward a Market-Oriented Housing Sector in Eastern Europe: Developments in Bulgaria, Czechoslovakia, Hungary, Poland, Romania, and Yugoslavia. Washington: The Urban Institute Press.

United Nations [1991] Annual Bulletin of Housing and Building Statistics for Europe. New York: United Nations.

The World Bank [1991] China Urban Housing Reform: Issues and Implementation Options. Washington: Environment, Human Resources and Urban Development Operations Division, China and Mongolia Department.

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

UNITED NATIONS CENTRE FOR HUMAN SETTLEMENTS (HABITAT)

SECOND CONSULTATION ON THE BUILDING MATERIALS INDUSTRY

Athens, Greece, 4–8 November 1991

Distr.
LIMITED

ID/WG.510/4/Corr.1
8 October 1991

ORIGINAL: ENGLISH

FROM CENTRAL PLANNING TO MARKET SYSTEMS: IMPLICATIONS OF ECONOMIC REFORMS FOR THE CONSTRUCTION AND BUILDING INDUSTRIES*

Corrigendum

Page 7

Replace table 4 by the attached text.

Page 9, third paragraph

The fourth sentence should read In other centrally planned economies such as China, Cuba and Viet Nam, housing is mostly provided by the state.

Page 15

Replace table 6 by the attached text.

Page 17, sixth paragraph

The last sentence should read At a minimum, UNIDO should work to conduct, coordinate and disseminate research on the following questions:

Page 18

After subparagraph 4 insert

5) how should the procedures used by governments to provide land and finance capital to construction firms be changed to encourage the restructuring of the construction and building materials industry?

*This document has not been edited.

V.91-29513 7876T

Table 4

Improving Quality of Centrally Planned Economies' Housing Stock

	Dwellings per 1000/ Population	Average Size of Dwelling (sq m)	Percent of Dwellings with		
			Piped Water	Indoor Plumbing	Bath/ Shower
GDR					
1960	318	na	66	33	22
1970	355	55.0	82	39	39
1986	416	64.3	na	68	76
HUNGARY					
1960	277	na	22.7	16.1	17.0
1970	302	61.5	35.1	26.4	30.8
1987	366	na	77.7	67.2	73.7
POLAND					
1960	236	na	18.8	10.3	6.2
1970	248	54.3	47.3	32.9	29.5
1984	277	67.9	78.9	65.4	63.9
USSR 1/					
1960	na	na	na	na	na
1970	235	46.8	78.9	75.8	60.7
1980	252	55.5	91.8	89.7	82.8
YUGOSLAVIA					
1961	220	44.8	na	na	na
1971	245	49.6	33.6	26.2	24.5
1984	290	60.7	70.0	na	54.2

1/ Installations: urban housing stock only.

Source: Matras, 1989.

Table 6

Changes in the Structure of Eastern European Construction Industry, 1980, 1986 1989

Size of Firm by Employment	Hungary Firms 1980	1986	1989	Percent Change 1980-89	Poland Firms 1980	1986	1989	Percent Change 1980-89
Small (1-49)	4	322	1,082	26,950.0%	60	163	322	426.7%
Medium (50-199)	108	230	333	208.3	202	466	665	229.2
Large (200-999)	153	131	98	-35.9	721	804	741	2.8
Very Large (1000+)	70	58	48	-31.4	355	285	201	-43.4
Total	335	741	1561	366.0%	1,338	1,718	1,929	44.2%

Source: United Nations, 1991.