# Assessing Competitiveness In Moldova's Economy

**A study conducted for USAID**

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BIZPRO
Economic Growth Through SME Development

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# EXECUTIVE SUMMARY

"In the last six years, one-third of the young people have left to make a decent living abroad." Moldova today? Actually, the comment referred to Ireland in 1959. Moldova's experience in the first years of the 21st century mirrors that of other countries throughout recent European and American history. There are parallels with the "guest workers" from Italy, Spain, Portugal, Greece, and Turkey working in Germany during the 1960s and 1970s, and today's exodus echoes the migration from the deep South to the Midwest and the Northeast of the United States after World War II.

Although these episodes of economic and social transformation bring stress to communities, and often personal suffering—as well as instances of amazing individual success—renewal of society and economy, however gradual or abrupt, is necessary for survival and growth. This economic and social renewal is driven by the competitive demands of individuals, companies, and public and private institutions for resources to supply what the markets require for growth. A successful transition entails structural change of unprecedented magnitude, and success is neither preordained nor assured by recent history. For instance, in 1991 over 45 percent of the people of Moldova made their living from agriculture-related activities, while the average in western Europe and the United States was less than 5 percent. Although intense, modern horticulture, including vineyard development, may warrant a somewhat higher percentage; the transition will mean vast sectoral shifts.

In many respects, Moldova today is at a crossroads: the country is the poorest on the European continent, but is not without endowments, notably its soil and climate, its location as a bridge between the expanding European Union and the countries of the Commonwealth of Independent States (CIS), and a skilled and inexpensive labor force. However, Moldova has largely failed to capitalize on these endowments or on the opportunities of European market integration. Agricultural production suffered as the rush to decollectivize resulted in the fragmentation of landholdings, along with an inability to cope with the collapse of traditional market relationships. Likewise, there has been no systematic attempt through sustained regulatory reform to leverage the competitive advantage as the land bridge between the European Union (EU) and the CIS.

Moldova may yet grasp the opportunities before it by rapidly opening all of the access points to the expanded European market to attract investment and create job opportunities that would bring back its young people. Even now, workers' remittances are fueling a residential construction boom, as well as the acquisition of new skills and understanding of market architectures. In fact, the growing depopulation of rural areas, where often only the very young and the very old remain, may facilitate the necessary consolidation of landholdings needed for mechanized and competitive production.

Moldova's private sector producers and exporters have shown great resilience in coping with an adverse business environment. The legacy of the "old Moldova" may still dominate much of the country's economy, but the transition is moving forward. Entrepreneurs are adapting to new market architectures—changing expectations and standards, emerging rules, and evolving market channels and patterns of intermediation. They are willing to invest in

learning to prosper in a competitive environment. They have found little support, and receive often confusing signals from successive governments, and at times open opposition in the policy environment. Nevertheless, market support structures and services, while woefully inadequate, are evolving. But much more needs to be done, especially in terms of the quality assurance system, infrastructure services (transportation and energy), and financial services, as outlined in this assessment report.

## Policy and Regulatory Reform

The policy environment lags far behind that of other small open economies that have emerged from communist strictures. Uncertainties about the applicable regulations, frequent changes in key provisions, and wide administrative discretion in applying and enforcing legal and regulatory standards impose significant costs on doing business. In a recent analysis of the business environment in 27 transition economies by the Economist Intelligence Unit, Moldova ranked 19th, just ahead of Georgia. Overall, the cost of compliance vastly exceeds any benefits from regulatory and administrative requirements.

Transformation of the economy demands investment. A recent USAID study of the potential of high-value agriculture concluded that an investment of US$2 billion was needed. Similar lessons apply to other sectors. Mobilizing such sums from within the country will prove difficult, if not impossible. Foreign direct investment (FDI) in the context of an integrated Europe is a prerequisite. Over the period 1998-2002, FDI per capita in Moldova was less than 9 percent of the corresponding amount for the newly accessioned EU members.

Some of the factors influencing investors' perceptions of country risk are beyond the control of the Moldovan authorities. The problem of a quasi-independent Transnistria, for example, which often trades internationally as part of Moldova's economy, remains intractable. But resolute regulatory reform and a shift to rule-based governance would go a long way to build investor confidence, raise credibility, and attract FDI. The authorities have recently accelerated the process of policy and regulatory change through the establishment of a public/private commission with real powers to initiate regulatory reform. There is a public commitment of political support at the highest level to introduce and pass in Parliament, before the summer 2004 recess, a *guillotine mechanism* to streamline Soviet-era regulations and institutions drastically, adopting best practices from the new EU members.

## Market Support Structures

The country's quality assurance (QA) infrastructure reflects the transitional state of the economy. The infrastructure, in terms of standards, testing, and certification bodies, is in place for doing business with the CIS countries, but not Europe or the wider global market. The Moldova Standard (MS) conformity mark needs to be recognized and integrated into the system of European norms through reform of the QA system and harmonization of standards and regulations. The recently signed EU/Russia protocol in support of Russia's application to join the World Trade Organization (WTO) underlines this strategic direction. There is a real

danger that Moldova's market support system will fall behind the pace of reform within the core of the CIS itself.

The efficiency of internal market architectures for exports, imports, and domestically produced goods is inadequate for competitive performance. Major gaps in market support structures, including transport and logistics services, raise costs and impair key dimensions of quality, such as on-time delivery. The inability to understand and adapt to global market rules adds costs to consumers and undermines the competitiveness of locally produced goods. Distribution systems are rudimentary, often forcing manufacturers to run their own retail shops, and other weaknesses, such as a lack of bonded warehouse space, result in greater working capital requirements and higher transaction costs.

## Selected Clusters

Moldova's exporters have been losing ground in their traditional markets to the east, as market architectures evolve and competitors from the enlarged EU and Asia are moving in. The prime example is wine, where Moldovan exporters are losing market share in Russia's growing market. The only major commodity where Moldovan exporters have been able to increase their share in the Russian market is fresh fruit, mostly apples. In the EU 15 markets, virtually all of Moldova's significant exports have been gaining market share, as buyers look beyond traditional suppliers.

This assessment of the performance of clusters selected either for their economic importance (wine), their role in evolving market architectures (information and communications technology), or because of evidence of competitive performance in export markets (agribusiness; light industry, including apparel and leather) provides some indication of priorities for moving toward European market integration. One principal lesson is to stay closer to the market. Where Moldova's exporters are relying on the market architectures inherited from the past, as in the case of wine for Russia, they are being outflanked by more nimble competitors and are losing market share. Where they rely on cooperation with partners who know the markets and their architectures, as in the case of the EU, they do well.

In the case of wine, Moldovan producers need to accelerate the transition to produce a New World-style wine, and to match competitors in the Russian market in the battle for market share. These improvements will require significant new investments, in particular foreign direct investment. The wine cluster has been the target of some FDI, even though much of that involved debt-for-equity swaps with Russian interests.

In the case of fresh fruit for Russia, there is also a need to adopt new technologies, such as controlled atmosphere storage to take advantage of better prices during the off-season. With respect to walnuts for the EU market, a somewhat serendipitous rising star, this offers opportunities for value-added production.

In the apparel industry, as well as in footwear, Moldova's low-cost skilled labor has attracted European, especially Italian, buyers for contract manufacturing, with some encouraging signs

that Moldovan firms are moving up the value chain as a quick-turnaround supplier to the European fashion industry. The cluster is also beginning to benefit from foreign direct investment.

The information and communications technology (ICT) sector draws on science and mathematics skills in the labor force, yet its rudimentary organization and predilection to operate in the shadow economy severely limit its growth potential. Both policy reform and increased cooperation within the sector will be necessary to help the cluster graduate to greater economic prominence—supporting the adaptation of the rest of the economy to information technology—and to develop its export potential.

The export base remains quite narrow, although there are some indications that exporters are moving into new markets, such as the United States. The transformation of these clusters is driven largely by initiatives at the level of small and medium-sized enterprises. The difficulties they face in obtaining financing for investments and working capital hamper the process of transformation and significant progress awaits full implementation of the policy and regulatory reform described previously.

## Prospects

Our assessment of competitiveness in the Moldovan economy clearly shows potential. The performance of selected activities in competitive export markets attests to the resilience of the country's entrepreneurs and managers. Moldovan products and services are gaining market share in growing markets, for whatever reason. However, the analysis also underlines the importance of concerted action in key clusters, such as wine, to respond to changing market architectures and leverage the competitive potential of the economy.

One theme runs through this assessment of competitiveness in Moldova: the business environment imposes additional costs and deters investment. Adhering to policies and administrative practices that retard or reverse economic growth is akin to shooting yourself in the foot. While more initiative is needed within the private business community, a coordinated effort to improve the investment climate with an accelerated program of policy and regulatory reform can yield significant returns, complementing and augmenting initiatives at the cluster level. Recent policy steps hold promise.

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# INTRODUCTION

This report summarizes the findings of an assessment of competitiveness in the Moldovan economy requested by USAID under the umbrella of the BIZPRO/Moldova project, implemented by Development Alternatives, Inc. (DAI). BIZPRO staff and visiting consultants conducted this assessment over a period of four weeks in May 2004, although related activities are continuing. This analysis of strategic competitiveness issues relied on DAI's Market-Driven Competitiveness Appraisal (MDCA), which links competitive performance to evolving market architectures in terms of demand patterns and preferences, rules and incentives, and competitor behavior. The MDCA seeks to identify strategic priorities as a basis for building consensus. This report represents an interim step in a continuing effort to foster competitiveness and productivity growth in the Moldovan economy.

Part I offers a succinct summary of the findings on issues that cut across the economy—the policy environment, the market architectures, and quality assurance system. It also provides highlights of the analysis for clusters selected for closer scrutiny on the basis of performance indicators, in particular their performance in competitive export markets. These clusters include wine; agribusiness, especially fruit and nuts; light industry (textiles and apparel, leather goods); and information and communications technology. Part II presents more detailed reports on crosscutting issues and assessments of the selected clusters.

# COMPETITIVENESS FOR MOLDOVA: THE KEY TO PROSPERITY

The path to prosperity for Moldova lies in rapid productivity growth for both labor and capital. Sustained productivity growth is the mark of competitiveness. On that score, Moldova's economy on the whole falls short. The country today is Europe's poorest. A growing number of Moldovans are working abroad: at the current rate, workers' remittances may equal gross foreign exchange earnings from all merchandise exports in 2004. Outside of their traditional markets to the East, Moldova's exporters are competing primarily on the basis of low wages for an often highly skilled labor force. At the same time, low labor costs do not protect Moldovan producers of consumer goods for the domestic market against increasing competition from imports. Neither exporters nor enterprises competing with imports get much help from the government, which continues to hew to policies virtually designed to increase the cost of doing business and to sap the country's competitive potential.

Yet the picture is by no means all bleak. In a difficult environment, some of Moldova's enterprises increasingly manage to compete successfully, to survive and even prosper in competitive markets. The country's exports to the EU 15 are gaining market share in growing and stable markets there. Apparel producers are moving along the upgrade path from just sewing, to cutting and sewing, and on to private label production. The need to meet quality standards and certification requirements in new markets is putting increasing pressure on the country's quality assurance infrastructure, which shows some signs of responding, albeit hesitantly.

The challenge for Moldova is to leverage emerging capacities, to raise productivity levels throughout the economy, and to improve the competitiveness of the country's producers, in domestic as well as export markets. Meeting that challenge demands a carefully articulated strategy, focusing on areas of economic activity that have a high payoff in terms of productivity gains.

## THE ENVIRONMENT FOR COMPETITIVENESS

Competitiveness means different things to different people. For our purposes, it simply stands for a *firm's* ability to meet (or exceed) productivity standards in the marketplace on a sustained basis. Productivity, in turn, is the ratio of the value of a good or service—what consumers are willing to pay for it—to the value of all resources used in its production. Productivity growth flows from innovation. The rate of innovation—not just major leaps forward, but particularly small incremental improvements in product and process—in turn depends on incentives and capacity. Incentives are largely determined by the *business environment*, shaped by both policy and customs.

In terms of innovative capacity, all evidence points to the importance of *market linkages*, both with *complementors*—suppliers, clients/customers—along the value chain and with *competitors*, in the form of joint action and formal or informal information exchanges. The term *cluster*, stripped of all its quasi-ideological connotations, refers to this particular combination of vertical linkages with complementors and lateral linkages to competitors. The quality and intensity of linkages—economic as well as social—in a cluster drive systemic efficiency or productivity. They determine transaction costs and shape innovation. In fact, in Organisation for Economic Co-operation and Development (OECD) parlance, clusters are innovation networks.

The structure of market linkages, the *market architecture*, not only influences innovative capacity, but affects competitiveness directly. Understanding and adapting to the rules, institutions, and channels of the market interface between consumers and producers, between suppliers of inputs and upstream services, and between enterprises and factors of production (labor, capital, land, and technology) are critical for achieving sustained productivity growth. This issue is central for Moldova's export economy, which faces a still unfamiliar market architecture in the West, with a sophisticated and evolving set of standards, consumer expectations, distribution channels, and supply chain features, and a more familiar one to the East, still largely shaped by the rules and relationships of the Council for Mutual Economic Assistance (COMECON) days, but yielding rapidly to new structures. Changing architectures in the export market help explain Moldova's export performance.

The three dimensions of competitiveness—the firm, the business environment, and market architectures—provide the overall analytical framework. DAI's competitiveness appraisal focuses on both the policy environment, sometimes characterized as national competitiveness, and on market linkages for selected clusters that have demonstrated competitive potential in key markets. It touches only in passing on issues of competitive strategy at the level of the individual firm.

## THE POLICY DIMENSION

Creating a business environment or investment climate that stimulates, supports, and rewards competitive enterprise performance is the principal economic policy challenge anywhere. Studies focusing specifically on Moldova, such as the annual *Cost of doing business* survey, and international comparisons suggest that the policies of Moldova's government hinder rather than foster competitiveness in the country's economy. In fact, government policies, and the uncompetitive practices they spawn and protect, have become the biggest obstacle on the path to prosperity. Where Moldova's enterprises manage to perform competitively, it is in spite of, rather than because of, the country's business environment.

Policies that have harmed the competitiveness of Moldova's economy start at the macroeconomic level. Prior to the 1998 ruble crisis, a combination of tight monetary and loose fiscal policies led to a loss of competitiveness and a rapid buildup of the current account deficit. Lagging structural reforms hampered an adequate supply response to the rising aggregate demand, fueling imports instead. Overregulation, excessive interference, corruption, and the failure to ensure an adequate physical and economic infrastructure impose significant costs on enterprises, whether in the domestic or in export markets. The *Cost of Doing Business in 2004* survey concluded that enterprise managers spend almost 19 percent of their time striving to meet all mandatory requirements. Inspection costs averaged US$752 across all companies in the survey.

With respect to export markets, the crumbling infrastructure and inadequate administrative performance are sapping one of the country's potential strengths: its location as a trade hub between East and West. Exporting companies in the *Cost of Doing Business* survey spent an average of about 3.5 days and US$223 per transaction to meet all customs requirements.

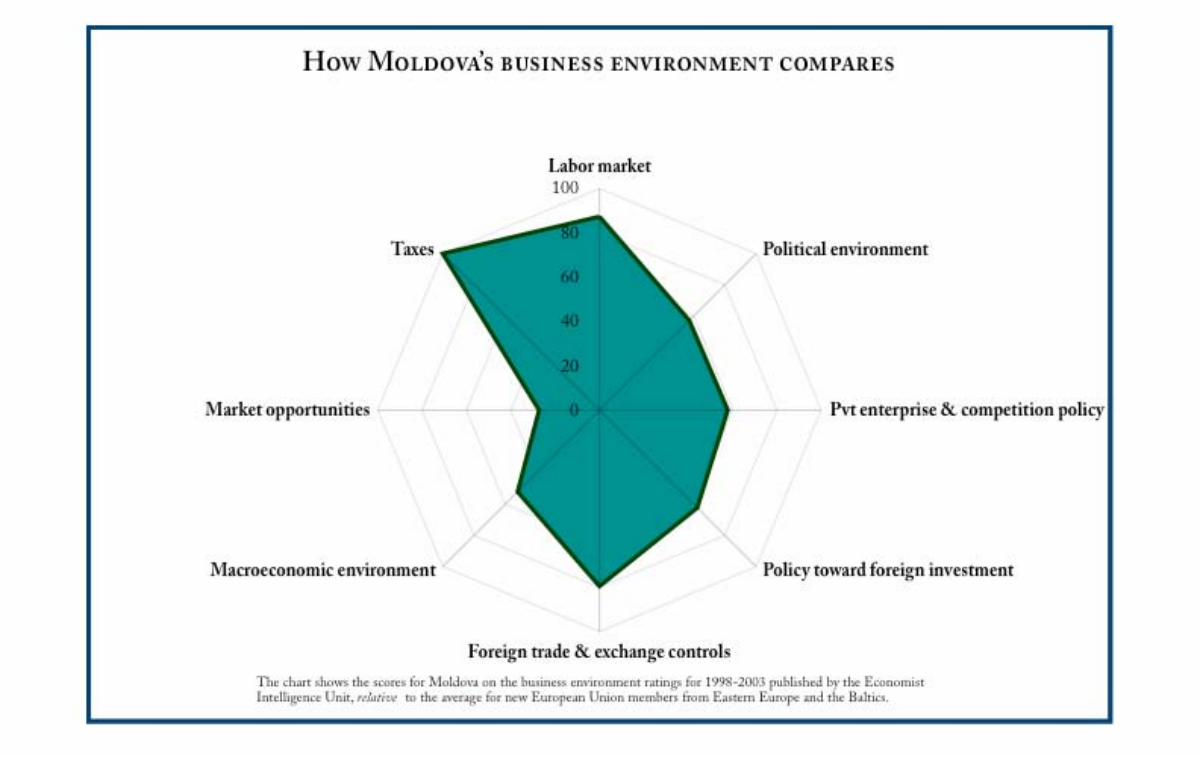
Benchmarking Moldova's business environment against that of other countries confirms these diagnostics. Such comparisons have become something of a growth industry; the web site of the World Bank's Foreign Investment Advisory Service (FIAS) lists some 21 separate rankings and ratings. Perhaps the best known and most widely cited benchmarking exercise is the World Bank Economic Forum's *Global Competitiveness Report* (GCR), which annually ranks over 100 countries in terms of two composite indices. Unfortunately, the GCR does not yet include Moldova.

Other rankings reflect more closely the particular interests of investors, such as the business environment scores published by the Economist Intelligence Unit (EIU), which links these scores to investment responses. An EIU appraisal published in September 2003 covers 27 transition economies in Eastern Europe and the CIS. This appraisal presents business environment scores based on 70 individual measures, aggregated into 10 indicators, for the period 1998-2002, together with forecasts for the period 2003-2007. It also provides measures of foreign direct investment as an indicator of business response.

Using the EIU scores, we can sketch the position of Moldova for the 10 principal indicators relative to selected benchmark countries. Figure 1 shows a comparison of Moldova's scores with

those for the EU accession countries in East-Central Europe and the Baltics. The comparison highlights the gap in a number of key policy areas, although the largest gap, for "market opportunities," is more a function of the small size of the domestic economy. Many of the laws and regulations that account for major benchmark gaps are effectively in violation of Moldova's obligations under its WTO membership. Just bringing the legal and regulatory system into compliance with WTO obligations would narrow many of these gaps.

**Figure 1: Moldova's Policy Environment Compared to New EU Members**




These comparisons are not just of academic interest. Understanding how the country stacks up against others, and how it can do better may have some intrinsic incentive value. However, the most important incentive is the direct link to economic growth. Economic growth hinges on productive investment that advances innovation. There is, of course, a strong and consistent relationship between the investment climate and the level and pattern or productivity of investment, as illustrated in Figure 2. A country like Moldova needs to look to investors both at home and abroad, because some of the needed investments and the associated technologies call for foreign investors. For example, a recent study on high-value agriculture competitiveness conducted for USAID (under the Private Farmer Commercialization Program implemented by the Citizens Network for Foreign Affairs, CNFA) concluded that some US$2 billion needed to be invested to have an impact in that cluster. Moldovan investors cannot raise that amount. Foreign direct investment therefore remains critical for Moldova, both for the financial resources and for technology. And some of that investment has begun to move into the economy.

**Figure 2: The relationship between the business environment and FDI**

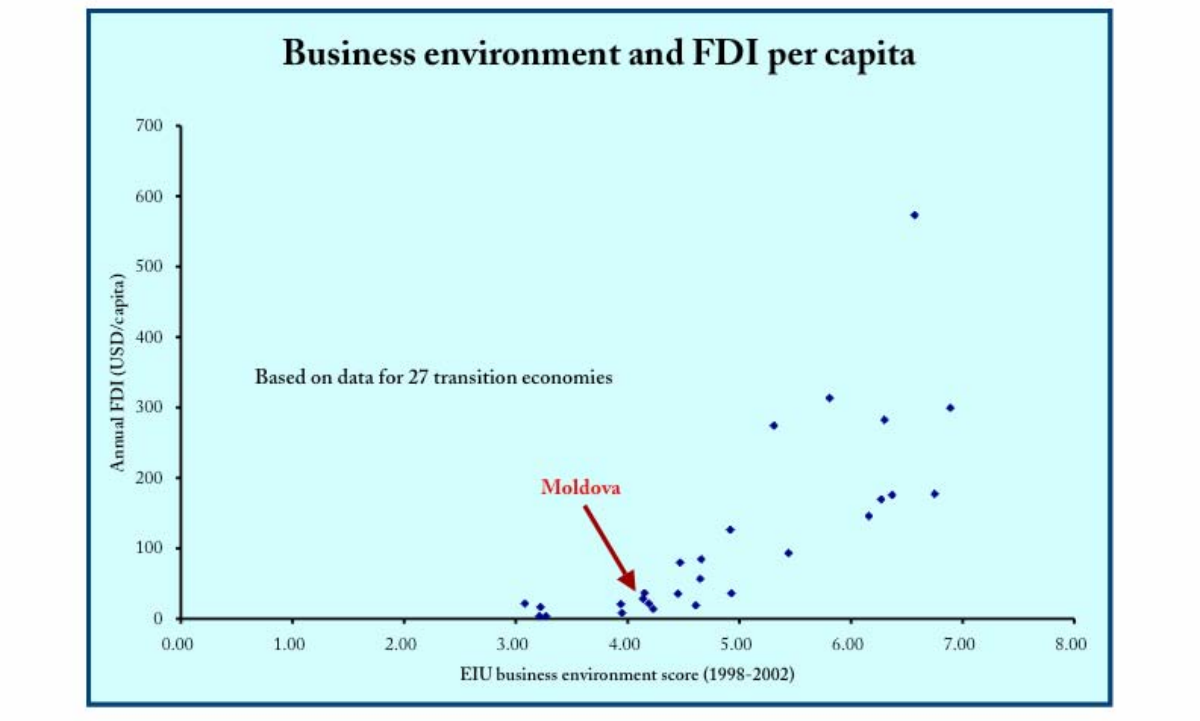



Figure 2 also illustrates another point about the relationship between FDI and the business environment: below a certain threshold level for the business environment, around 5 on this scale of 1 to 10, FDI does not respond to changes. What is required to stimulate foreign direct investment (as well as domestic investment) is a significant shift toward a more hospitable investment climate. Such a shift demands concerted commitment from both the public and the private sector.

## FIRMS AND MARKET LINKAGES

### Trends at the Enterprise Level

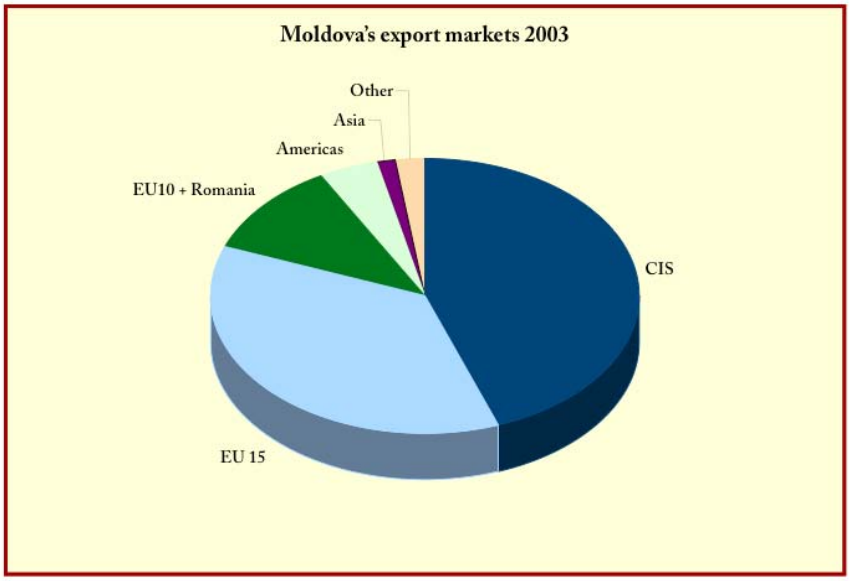
Moldova's economy remains stuck between the statist structures of the past and an emerging private enterprise sector. Private enterprises, many with foreign partners, have emerged in part from the restructuring and privatization of state-owned enterprises. Many of todays (privately-owned) small and medium-sized enterprises started as survival mechanisms, and there is wide variation in their competitive performance, primarily with respect to domestic markets. Yet successors to the large-scale enterprises of the Soviet era, whether with foreign majority partners or continuing under state ownership, often occupy positions of market power that hamper the growth of market linkages needed for competitive clusters.

Cooperation among entrepreneurs and enterprise managers in related or competing activities tends to be low, not unusual for a low-trust environment with a government disposed towards excessive levels of surveillance and interference. Lack of trust has been a major factor in bringing structural reform to a virtual standstill. At the same time however, there are informal support arrangements among complementors, and even competitors, with respect to joint sourcing of inputs, flexible payment terms, or joint marketing (such as a single showroom for shoes from competing manufacturers).

## Demand Conditions

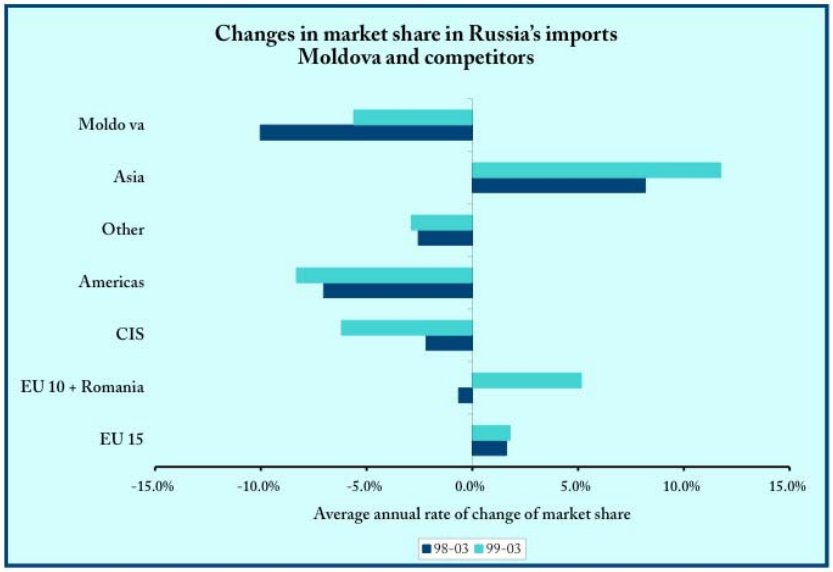
Figure 1 shows that Moldova lags most in terms of market opportunities. A small population and low incomes limit the size and sophistication of the local market. However, domestic markets cannot be written off, as they remain the principal target for a good portion of the country's small and medium-sized enterprise sector. Moreover, as competition and incomes increase, these markets will become increasingly important. At present, the flow of workers' remittances from abroad is largely responsible for fueling a surge in demand that is boosting growth (even if much of the demand is going to imports) in particular construction materials for the rehabilitation and renovation of the country's aging housing stock, or new construction.

As a small open economy Moldova's export markets to the east and west, as well as overseas, will continue to be major targets. Currently (2003), 45 percent of Moldova's exports go to Russia and Ukraine, and 39 percent to the countries of the EU 25; Romania accounts for another 8 percent, as illustrated in Figure 3. (Prior to the ruble crisis of 1998, two-thirds of Moldova's exports went to Russia and Ukraine, and only 17 percent to the EU.) The forces shaping trends and shifts in these two main markets thus matter most from a strategic point of view.



In 2003, Moldova's exporters increased exports overall by more than a third over the previous year. In the West, recent trends have been favorable to Moldova's economy, primarily in terms of outsourcing opportunities in manufacturing; exports to the EU grew by more than 47 percent over 2002. Exports to the EU tend to leave the initiative with the buyer, who typically (though no longer always) provides design specifications, furnishes all of the materials, handles compliance with norms and standards, and markets the finished goods to the end consumer. As buyers in the EU have gained experience with Moldova, and as the EU's eastern neighbors are now members, Moldova is becoming more a more attractive place for outsourcing business. Of course, these arrangements mean that only a portion of the total value added is generated in Moldova. Yet when viewed in a strategic context, rather than as a stopgap measure, these arrangements offer a (relatively) low-risk opportunity for learning how to operate and succeed in competitive markets. At least some of Moldova's exporters understand that opportunity and are viewing current arrangements strategically.

To the east, Moldova's exporters are facing an increasingly sophisticated market in Russia. As Russia's integration into the world economy proceeds, a new market architecture is replacing traditional CIS standards and expectations. The experience in the wine sector, where Moldova's share in the Russian market has fallen from 57 percent in 1998 to 45 percent in 2003, points to the following: unless Moldovan exporters adapt to the emerging market architecture, they will be squeezed out of traditional markets. While the old way of doing business with CIS countries will not become extinct overnight, patterns and trends in demand in the east are likely to approach those in the west of the country. Figure 4 illustrates the inroads that Asian exporters (China and Japan) have made into the Russian market. While both the EU 15 and the new EU members (plus Romania) have also gained market share, while Moldova was a big loser in the wake of the 1998 ruble crisis, but has continued to lose ground since. A further breakdown reveals that Moldova's exporters have been maintaining their aggregate market share for agricultural products (Chapter 01-24 in the Harmonized System of Customs Statistics), and their overall loss in market share is due to nonagricultural exports.



## Supporting Economic Activities

Competitive performance in an economy hinges on the performance of market support structures that can be grouped into five categories:

### *Physical and social infrastructure*

Moldova's *physical infrastructure* is no longer up to the task of supporting competitive performance in export markets or efficient distribution in domestic markets. The road transport network, although extensive, has fallen into disrepair, by some estimates increasing vehicle operating cost by as much as 50 percent for heavy trucks. The telecommunication infrastructure is inadequate for pursuing any aspirations to become a trade hub between West and East. Finally, while primary energy—natural gas and oil—is in effect subsidized by Russia (charging the domestic price, which is significantly below the world market price), Moldova's electricity sector on the whole is inefficient, and carries some risk: aside from three small combined heat and power (CHP) plants in Chisinau and Balti, the country's major generating capacity is located in Transnistria. As a result, larger enterprises find it preferable to invest in their own generating plants, although the economics of these investment decisions are likely to be affected by the upcoming price increases for primary energy.

### *Market intermediation services*

For the most part, market intermediation services—market information, sourcing, facilitation, consolidation, freight forwarding, storage and warehousing, wholesale, and so on—are rudimentary. Intermediation activities, and wholesale operations in particular, tend to be viewed with suspicion, that translates into special regulatory and administrative attention. In addition, the benefits of more efficient market architectures are generally only dimly understood, and producers are unwilling to "give up" margins to intermediaries, thereby cutting themselves out of critical elements of their respective value chains.

In export markets, Moldovan producers rely almost exclusively on foreign partners. In the CIS countries, these partners tend to be part of networks developed during Soviet times, often reinforced through cross-ownership. In the West, the partners may be either clients in outsourcing arrangements or joint venture partners. In either case, they provide market information, handle customs formalities in the destination countries, and distribute goods to end consumers. For imports of fast-moving consumer goods (FMCG), distribution channels are fairly well organized. Similarly, market access channels for the construction materials industry, perhaps the major beneficiary of the surge in demand sparked by the rise in workers' remittances, are among the most sophisticated. Several levels of distributors are organized geographically, and producers sell their products at varying discounts so that prices for end consumers are the same no matter where they buy.

### *Quality assurance and standards compliance*

Moldova's systems for ensuring and certifying compliance with quality standards are complex and have yet to evolve to meet the needs of global markets. The quality architecture is still shaped primarily by the needs and requirements of the traditional markets in CIS countries, which adhere to the same GOST standards (based on the Gosstandart agency of Russia) and recognize the Moldova Standard (MS) mark. In addition, Russia recognizes several test laboratories and certification bodies in Chisinau for specific products that require further testing. The MS mark is not recognized anywhere else in the world. Moldova has adopted some 200 international standards, but its testing and certification institutions are not recognized internationally. As long as Moldova's exporters to the West rely on or work through foreign partners, compliance with applicable standards is their responsibility, but improvements in the country's quality infrastructure are essential for moving into higher value-added exports.

### *Transport and logistics*

There are no Moldovan companies that offer more than one transport mode, plus cargo handling, and related information services. There are three types of road transport (trucking) service providers: (1) operators with multilateral permits that allow them into Europe, with some equipment complying with EURO standards; (2) operators with aging equipment for CIS and non-EU markets, using bilateral permits; and (3) domestic operators with obsolete equipment. Excess capacity is endemic in the latter two, yet service levels are inadequate. As a result, a significant proportion of exporters and producers operate their own trucks—40 percent of respondents in a recent survey.

Railroad connections are oriented mostly toward the east, and incompatible gauges (Russian versus European) complicate the task of serving as a hub. Railroad freight rates are relatively high, and shipments to the east are reportedly subject to pilferage. Airfreight activities are limited, partly because Moldova is close to its markets, and partly because most of its exports have a relatively low value-to-volume ratio. Air cargo handling is a monopoly of the airport in Chisinau, and existing cargo airlines do not provide reliable service.

### *Financial services*

Currently, 16 banks are operating in Moldova, with limited assets and activity levels. While several banks have foreign investors, there is no foreign bank operating in Moldova, in part because the Moldovan authorities have imposed restrictions that make it almost impossible to manage a financial institution according to internationally accepted principles. The structure of the banking sector provides inadequate support to international trade, and hampers the development of market institutions needed to forge effective value chains, in particular those involving small and medium-sized enterprises. Strengthening the financial sector and introducing new financial products and services will be critical for building competitiveness in the Moldovan economy. One particular target for development is leasing, which could help alleviate the often desolate situation in the transport sector, and could also contribute to a "re-mechanization" of agricultural production.

### Factor Conditions

Moldova's drive toward competitiveness can build on three basic factor endowments: (1) the country's skilled and low-cost labor force, (2) the fertility of its soil and climate, and (3) its location as a link between the West and the East. Moldova's exporters and producers, competing with imports, have relied heavily on the first. In industries such as apparel, the country's workers offer a productivity/cost ratio that is higher than that for China. Yet there is a real risk that this advantage is eroding, as the more mobile members of the labor force seek employment abroad, and as the permanent budget crisis begins to threaten the quality of education. In some knowledge-intensive activities, such as software development, the need to work in the shadow sector and dependence on piecemeal outsourcing is contributing to a *de-skilling* process. What is missing, for the most part, is a strategy that realizes the temporary nature of such an advantage and focuses on rapid upgrading to escape the lowest-cost trap.

Moldova is widely thought to have a comparative advantage in agriculture. However, agricultural production and productivity have suffered greatly during the transition—partly as a result of the fragmentation of land holdings in the wake of land privatization, partly because of the deterioration of irrigation systems that have exacerbated the effects of the droughts in 1992, 1994, 1996, and 2000.

Finally, the deteriorating transport infrastructure, together with cumbersome customs and border-crossing procedures, all but negates the location advantage. For example, closeness to markets matters greatly in the fashion apparel industry, yet only if it translates into quick reaction and short shipment times. If poor roads, inadequate road transport, and time-consuming customs clearance procedures lengthen the time to market, a major advantage factor may be irretrievably lost.

## TOWARD A STRATEGIC FOCUS

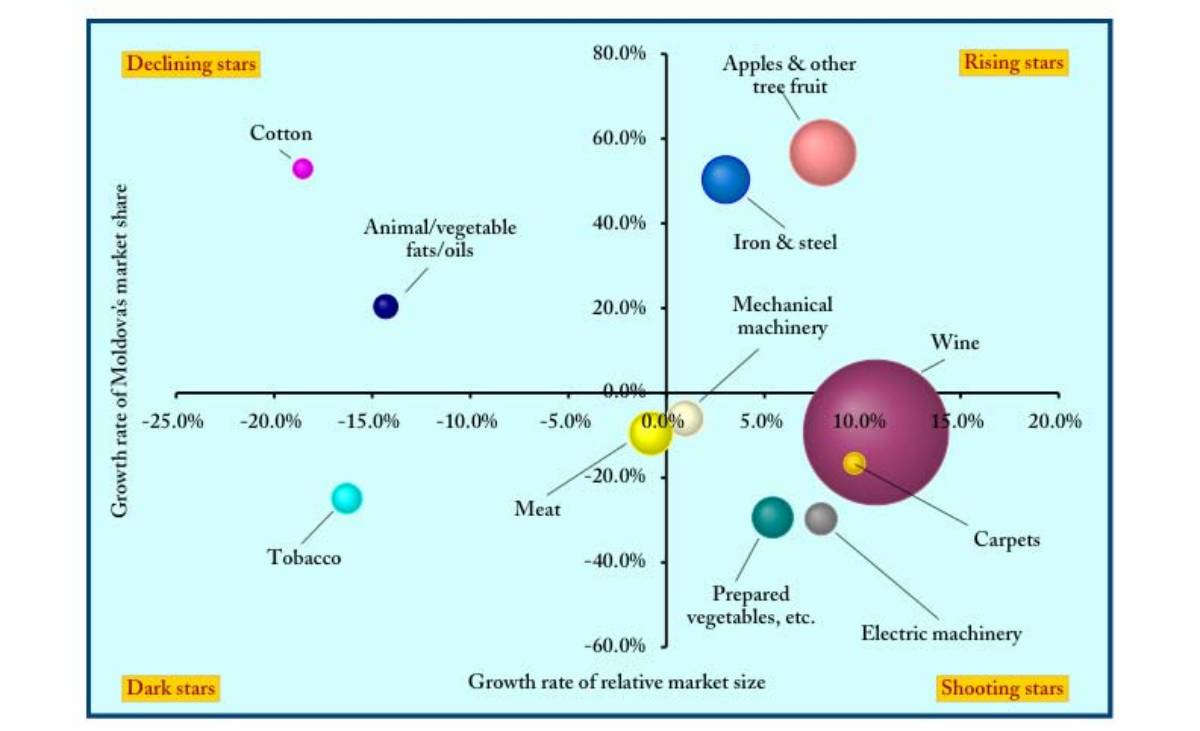
Interventions to promote enterprise growth offer the greatest chance for success when they seek to enhance both incentives and capacity for innovation, focusing on strategic priorities among key industrial clusters. Priorities for support aimed at raising competitiveness (sustained productivity growth) need to reflect market dynamics and the relative strength of clusters in these markets.[1] Looking to markets to assess competitive performance and potential differs fundamentally from a strategy of "picking winners"—and then rigging the game to ensure they do win.

Understanding Moldova's export performance to identify sectors or clusters with potential requires a focus on the country's major export markets, the CIS on one side and the EU on the other. With respect to dynamic performance in CIS markets, the patterns for the Russian market,

[1] Setting strategic priorities is not purely an analytical process. But the appraisal of market performance, such as changes in market share, in relation to market dynamics, such as (relative) market growth, can provide guidance for further exploration and choice. These two dimensions—relative market growth and growth in market share— define a competitiveness matrix with four quadrants, and adaptation of the venerable *Boston matrix* of business strategy.

shown in Figure 5, are indicative. Wine, Moldova's single most important export, is losing ground in a growing market, becoming a "shooting star" or missed opportunity. For the Russian market, apples and other fruit have been gaining market share in a growing market (a "rising star"); iron and steel exports also fall into this quadrant, although these are primarily exports from Transnistria. The clear majority of exports to Russia fall into the shooting-star category, where Moldovan exporters are losing market share to their competitors in growing markets. An inability to adapt to changing market architectures cedes ground to Moldova's competitors, who are more attuned to the emerging market realities.

**Figure 5: Moldova's export performance in the Russian market, 1999-2003**

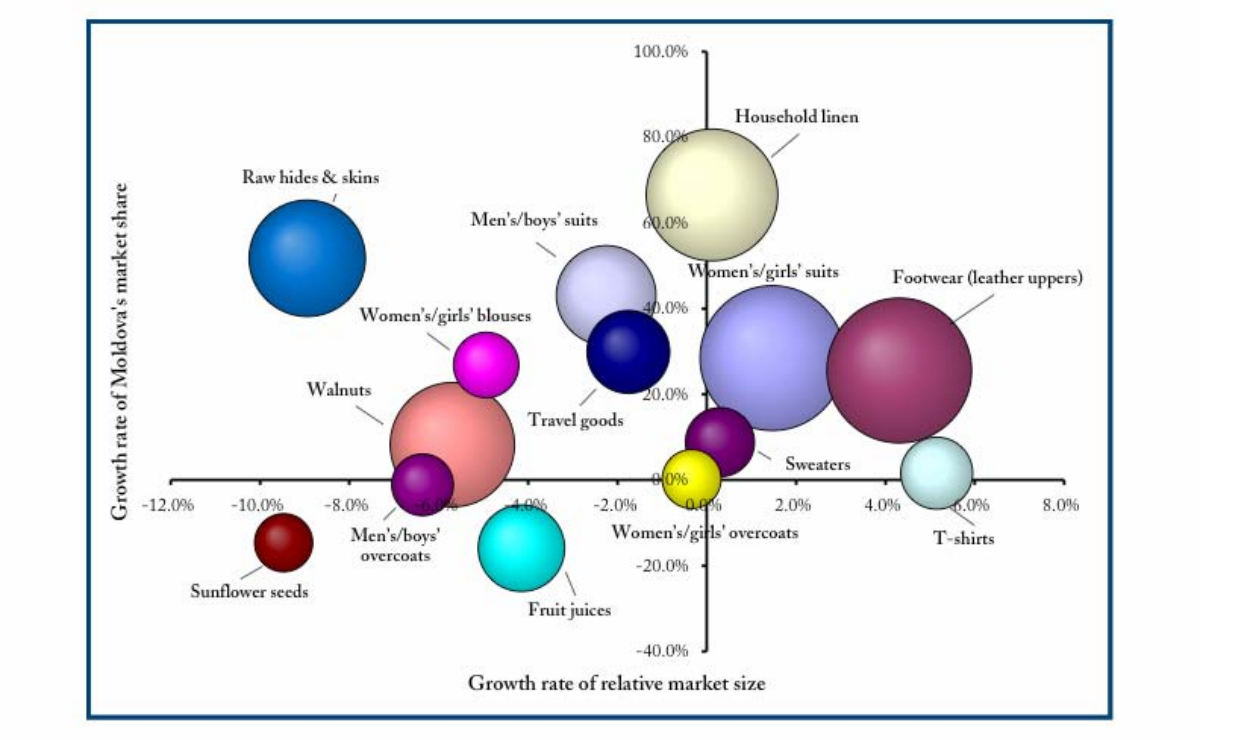



Note: Bubbles proportional to 2003 export value; apples & other fruit —US$42.7 million .

**A guide to the trade matrices**

The trade competitiveness matrices are standard tools used by the International Trade Center and others (although the "stars" nomenclature is DAI's) to gain a quick overview of the competitive performance of export commodities in selected markets. The location of the bubbles is determined by market dynamics (growth of imports in that commodity group relative to total imports, to correct for overall fluctuations) and competitive performance (growth in market share for Moldova's exports). The size of the bubbles is determined by the value of Moldova's exports in that category, here the most recent values, for 2003. Commodity groups are defined in terms of the Harmonized System (HS) for customs statistics.

**Figure 6: Moldova's export performance in the EU market, 1998-2003**




Note: Figure 5 and Figure 6 are using different scales, and the size of bubbles is *not* comparable.
Raw hides & skins = US$17.9 million. Figure 6 excludes "bars and rods of iron or nonalloy steel" (HS 7213 and 7214) at US$33.5 and US$33.2 million respectively, which originate in Transnistria.

The picture is different for exports to the EU, shown in Figure 6 (the analysis for the EU uses 4-digit HS commodity categories, rather than the 2-digit chapters in Figure 5). Across a broad range of commodities, in both growing and shrinking markets,[2] Moldova's exporters have been gaining market share, reaching export volumes that are significant relative to the size of the country's economy. One of the star performers, household linens, originates in Transnistria. The majority of commodity groups that are gaining market share are linked to outsourcing in apparel and footwear; walnuts and raw hides and skins are the two exceptions. It is unlikely that the gains in market share for apparel and footwear are evidence of the marketing acumen of Moldovan exporters. Rather, they are likely to reflect efforts by buyers in the EU to tap into new sources of supplies of processing services to meet demand on competitive terms. The increasing presence in key markets to the West speaks for the performance of Moldova's enterprises.

The differences in export performance between the EU and the CIS markets reflect, at least in part, the degree of adaptation to emerging market structures. In the CIS countries, Moldova's exporters tend to be linked to the market architecture left over from Soviet times—the rules and standards, the distribution channels, and the market linkages. These remnants of COMECON relationships, however, are giving way to new structures that more closely correspond to international (Western) norms. As a result, Moldovan exporters are increasingly concentrated in

[2] To re-emphasize: market dynamics are defined *relative* to total imports. Since total EU imports increased by 7.8 percent per year between 1998 and 2003, some of the commodity markets that declined in relative terms still registered absolute growth.

segments of the economy that are fading, and are therefore losing market share, even when markets are growing in the aggregate. In contrast, Moldova's exporters to the EU have little choice but to adapt to capitalist market architectures, and find the best opportunities for market entry and growth. Thus, Moldova's export competitiveness depends to a large extent on the readiness to adapt to the architecture of growing markets.

From a strategic point of view, the analysis of trading patterns focuses attention on several commodity groups that define clusters of interest. The priority commodity groups include apparel; leather and leather goods, including footwear; processed fruit products; and nuts. The following clusters were therefore selected for further analysis:

- Wine and spirits;
- Agribusiness, especially fruit and nuts, both fresh and processed;[3] and
- Light industry, in particular skins, leather and leather goods, including footwear and apparel.

In addition, the analysis also considered services clusters that are not covered by the merchandise trade statistics. *Information and communication technology,* in particular, was found to merit further on-the-ground analysis, both as an export cluster in its own right, and as an enabling activity shaping competitiveness in other clusters.

# WINE

## Important, but Challenged

Wine and related (distilled) products represent Moldova's second most important foreign exchange earner, after workers' remittances. It accounts for roughly one-fourth of total (gross) merchandise exports, and for an even greater percentage in value-added terms. The share of this sector in industrial employment is roughly 25 percent, and probably even higher if the cluster as a whole (including bottles, labels, laboratories, and the like) is considered. Semi-dry and semi-sweet wines account for 75 percent of total production, dry table wines for 10 percent, sparkling wines for another 10 percent, and fortified wines for 5 percent. Some 93 percent of total production is exported. In 2003, total revenues from wine exports amounted to US$195 million, plus US$36 million for distilled products (mostly brandy). Russia is the principal market, accounting for over 80 percent of total exports.

As with other agriculture, total wine production has declined sharply from the levels in the mid-1980s, as illustrated in Figure 7. The total vineyard acreage has declined by over 40 percent since the mid-1980s because of Gorbachev's anti-alcohol policy, the fragmentation of land holdings as

[3] A recent study for USAID undertaken by the Private Farmer Commercialization Program, managed by CNFA, provides a comprehensive assessment of prospects for high-value agriculture in Moldova. The analysis here is designed to complement, rather than duplicate. See: *Moldovan high- value agriculture competitiveness study*. Chisinau, 2004.

a result of the approach used in privatization, and the removal of subsidies on agricultural inputs. Total production has stabilized somewhat in recent years, even showing a slight upward trend. The proportion of wine bottled has been increasing, reaching an average of 63 percent over the last three years.

**Figure 7: Arresting the decline—Moldova's wine production since 1990**

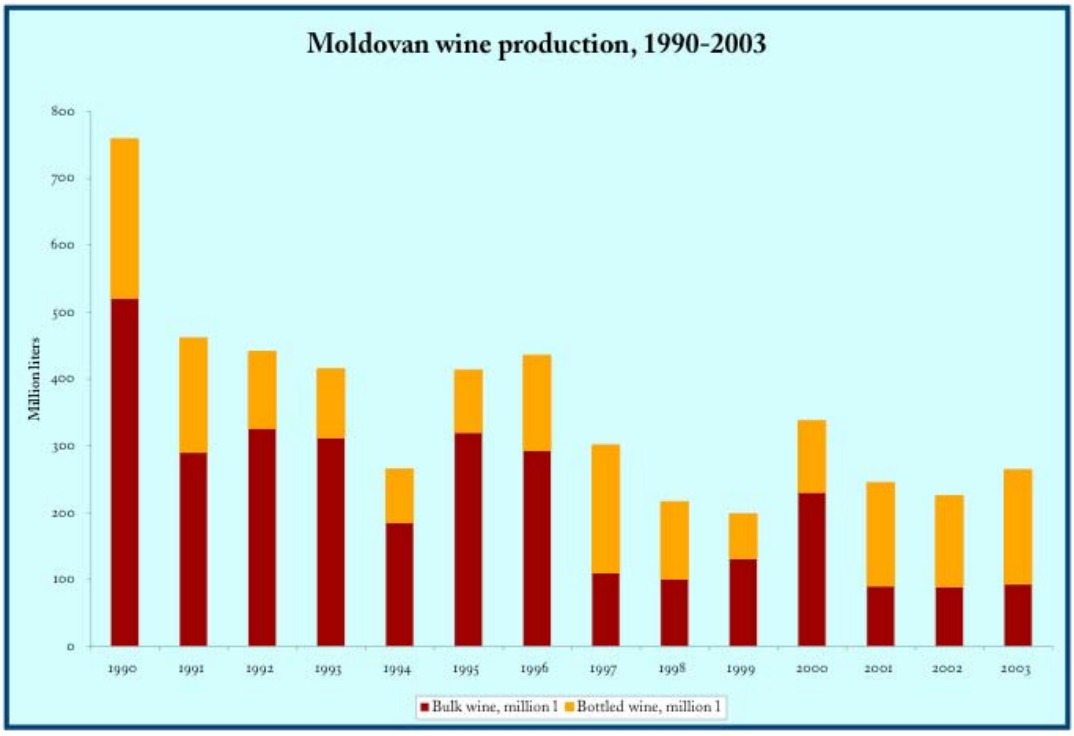
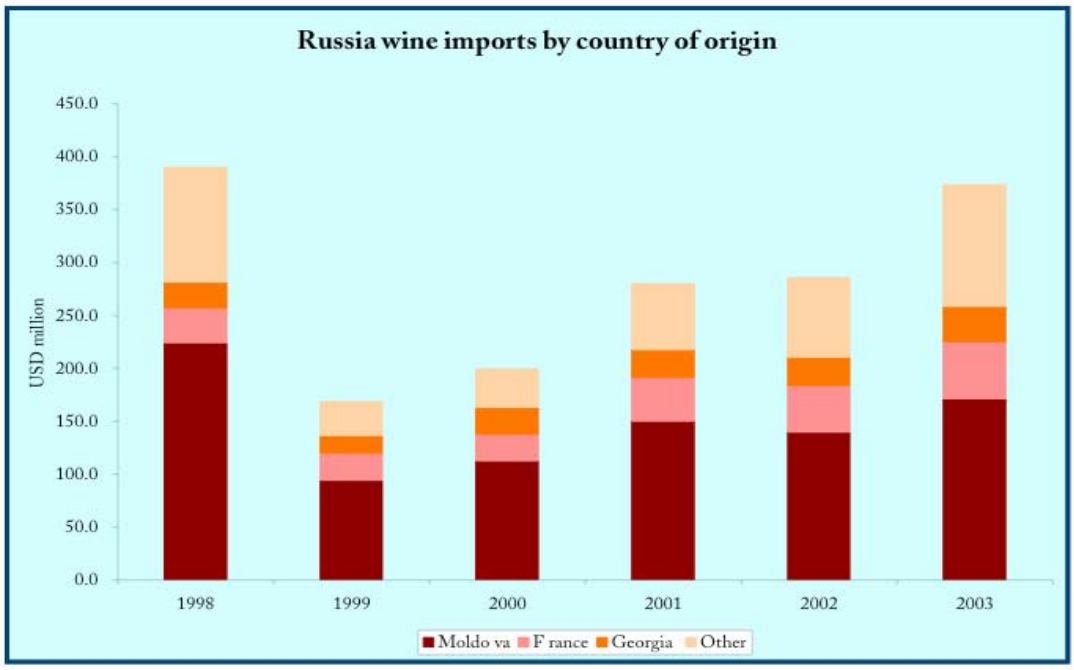



**Figure 8: Russian wine imports by major supplier**

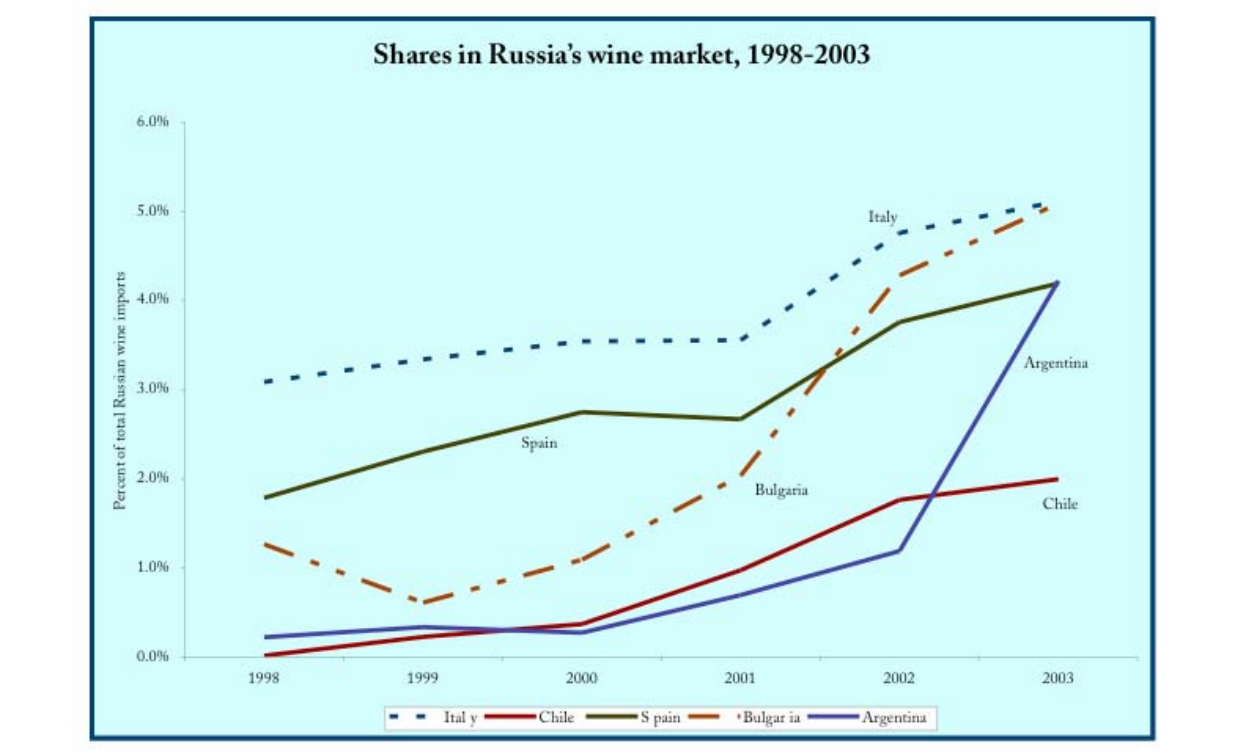


## Losing Ground in Russia

While Moldova remains the most important supplier in the Russian wine market, Moldovan wines have been losing market share, from 57 percent in 1999 to 45 percent in 2003. Supply constraints may have played a role; in 2002-2003, Moldova imported bulk wine from Romania equivalent to almost 10 percent of its exports to Russia. At the same time, the challenge goes deeper: the architecture of Russia's wine markets is undergoing a profound transformation, in terms of demand patterns, consumer expectations, and competitor responses. Moldova's wine exporters and their Russian partners, however, tend to continue to operate in tune with yesterday's architecture, failing to meet rising quality standards and showing little flair in promoting Moldovan wines.

Figure 8 shows broad patterns of Russian wine imports for the period 1998 to 2003—a sharp drop in 1999 in the wake of the financial crisis, followed by a speedy and accelerating recovery to the 1998 levels by 2003. Moldova's loss (in terms of market share) was Bulgaria's and Spain's (and Chile's and Argentina's) gain, as shown in Figure 9. Russian consumers are eager to try something different, and producers offering "New World" wine styles are offering just that. To be sure, many of these changes are occurring primarily in urban market segments, but Moldovan producers ignore these changes at their peril.

**Figure 9: Emerging competitors in the Russian wine market**




## Bouncing Back

The broad elements of a response strategy are fairly straightforward, and several of the large wineries are responding. First, Moldovan producers need to move to wine styles, in particular

"New World" styles, that are more in tune with emerging consumer preferences in both new and traditional markets. Second, they need to take steps to improve the quality and uniformity of their product. The necessary steps include improvements in the principal input (grapes) through replanting, and incentives to the winegrowers to cultivate for quality (such as grapes with a sugar content of 22-23 percent) rather than quantity. They also include investments in the kind of equipment needed for higher-quality wine production, changes in processes, and efforts to upgrade skills in the workforce.

Third, Moldovan producers and exporters need to adapt to the new market architecture and new rules of competition. Defending or expanding market share cannot just count on brand loyalty in traditional markets, since those markets are in decline. Gaining and regaining market shares requires active marketing and promotion, preferably through a joint approach.

Fourth, regulatory and administrative procedures add to the cost of producing and exporting wine that is competing in a highly price-sensitive market segment. Some of these regulations, such as the requirement to repatriate revenues within 90 days, could be relaxed to improve the price competitiveness of Moldovan wine.

Fifth, as in other sectors, the financial system has failed to facilitate the necessary transformation of the sector. Part of this failure is limited competition among banks, part of it is heavy-handed regulation by the Central Bank, and part is the lack of suitable instruments. The financial sector needs attention to improve the soundness and robustness of existing banks and to stimulate innovation in line with the needs of an economy undergoing fundamental structural changes.

Finally, the institutional framework for quality assurance is poorly prepared for rising quality standards in the marketplace. Initiatives are needed to add one or two laboratories accredited to certify compliance with the EU VI standards, since other markets, in particular Russia, are likely to move toward those standards.

## OTHER AGRICULTURAL PRODUCTS

### Evolving Market Architectures

Moldova's exporters of agricultural products, like their competitors elsewhere, are facing major changes in the architecture of target markets—the rules, standards, preferences, and market channels. The principal trend is the emerging dominance of multinational supermarket chains, which is moving eastward. Figure 10 shows the rapidly growing market share of the modern retail sector (hypermarkets, supermarkets, and discount stores) in three Central and East European countries. Supermarkets in Russia handle only about 10 percent of food retail now, but the segment is growing rapidly, as multinationals are moving in and domestic chains are embarking on an aggressive investment and expansion program. The supermarket sector in Moldova may be in its infancy, but it is growing, with Number One, Green Hills, and FIDESCO expanding. A multinational (Metro) is studying the market, although it has decided not to enter

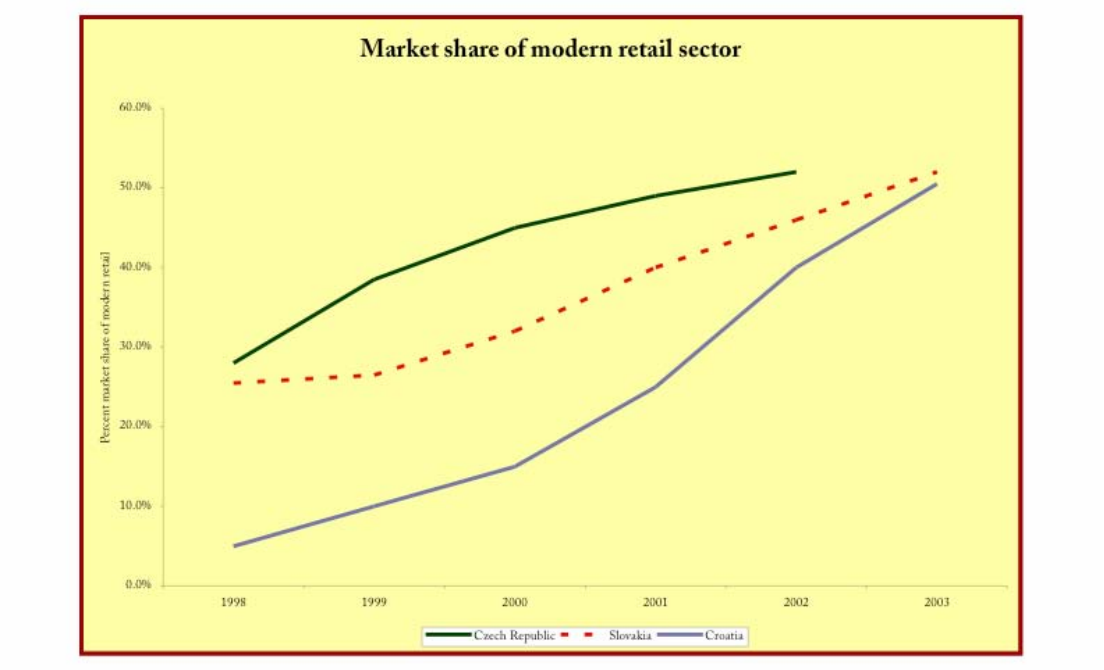
the market just yet. One of the factors has been the difficulty of finding domestic product sources that meet the quality standards.

With their growing share of the market, supermarkets are increasing their influence over national and international supply chains, heightening competition on price and quality. They also demand all-season supply, and rely increasingly on cross-border sourcing. More importantly, they tend to build exclusive supply chains through a system of "preferred suppliers"—producers able to meet quality and other standards on a consistent basis.

The standards established by the supermarkets—that is, the private sector—are becoming more stringent than those promulgated by the public sector, largely in reaction to a series of incidents and affairs that have caused public uncertainty and discomfort, such as the incidence of mad cow disease (BSE) or the occurrence of diesel fuel in palm oil, listeria in cheese, salmonella and antibiotics in poultry, or e-coli in meat. European grocery chains responded strongly to growing consumer concerns about the food supply system, and initiated a strict system of self-appraisal and outside certification known as EUREPGAP (Euro Retailer Produce Working Group adopting standards of Good Agricultural Practices). EUREPGAP's food safety requirements include:

- The product must be traceable to the registered farm where it was grown.
- Purchased nursery stock must be accompanied by an officially recognized plant health certification, and quality guarantees must be documented.
- A recording system must be established for each field, orchard, or greenhouse.
- Chemicals banned in the European Union must not be used on crops destined for sale in the EU.
- Each certified producer must complete one internal audit year, which tests for compliance with EUREPGAP standards, and corrective action must be taken where required.

**Figure 10: Supermarkets become dominant**



Meeting these requirements demands a full commitment at the level of the farm, but also the strengthening of the quality assurance infrastructure to conduct audits and provide required certification. Some of Moldova's exporters are making investments to address these requirements, but where they succeed it is because of their resilience, and not because of a supportive environment. The pressure to conform will increase as market architectures in Moldova's traditional export markets evolve toward the modern standard.

One of the key points here for the future competitiveness of Moldova's agricultural sector is the need to comply. There is no longer any choice. As the case of wine demonstrates most vividly, even Moldova's traditional markets are changing, and are changing rapidly, and the country's producers and its physical and institutional infrastructure must adapt.

## Trade Patterns

Traditionally, Moldova has been an important source of agricultural products for the countries of the former Soviet Union. However, agriculture generally has not fared well since independence, following the collapse of traditional markets and market linkages, and severe disruptions on the supply side as the approach to land privatization resulted in fragmented holdings.

The 1998 ruble crisis in Russia resulted not only in a sharp contraction of total imports, it also hit imports from Moldova disproportionately hard. Moldova's share in total agricultural imports to Russia dropped from 4.0 percent to 2.6 percent. Since then, this market share has basically stayed the same, as two major trends balanced each other—Moldova's exporters were losing market share in a growing market (wine) and were gaining penetration in another growing market (apples and other fruit), the latter driven in part by a bumper crop in 2003.

The biggest gains in terms of agricultural market share in Russia since 1999 have been recorded by the new EU members in Central and Eastern Europe and the Baltics. The market share of the new EU members increased at an average of 4.8 percent per year, while that of the "old EU" actually dropped. Other suppliers, mostly from Asia and the Americas, have registered smaller gains, on average by 1.8 percent per year.

In the EU, the analysis above shows that Moldova's exporters have been losing market share in a (relatively) shrinking market for fruit juices—a "dark star." At the same time, they have been gaining in the market for shelled walnuts, a product that builds on two of the country's current competitive advantages, soil/climate and low-cost labor.

## Fresh Apples and Apple Juice

Figure 11 tells the story of Moldovan exports of fresh apples to Russia. Traditionally, fresh apples were a major export to the CIS countries for Moldova, but the fragmentation of orchards as a consequence of land privatization, and the near-collapse of the Russian market in the wake of the 1998 financial crisis resulted in a sharp contraction in total production and exports. Other

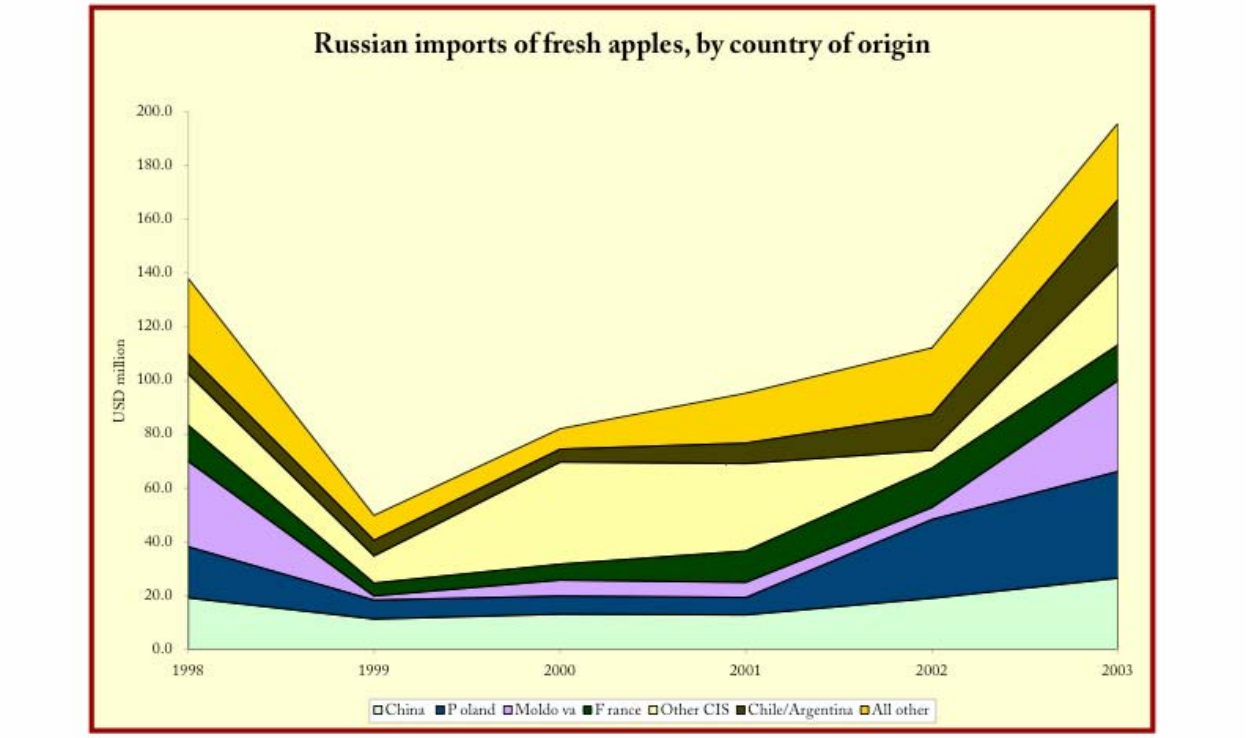
CIS countries, in particular the Central Asian Republics, gained much ground in the 2000-2001 recovery of the Russian market; but Moldova came back with a bumper crop in 2003. There remains much volatility in the Russian market for fresh apples.

One of the problems Moldovan producers of fresh apples and other fruit face is their inability to balance seasonal patterns. When their products enter the (Russian) market, it is at the height of the season, when supplies are plentiful and prices drop. There has been some investment in cold storage facilities, but the most promising development is the establishment of controlled atmosphere storage facilities to extend the life of the fruit and allow exporters to even out seasonal fluctuations. The first of these facilities has been constructed with USAID support under the Private Farmer Commercialization Program.

The patterns of exports of fresh apples reflect in large part supply restrictions. Of the 130,000 hectares producing apples and other fruit, some 42 percent have been estimated to require significant investments for replanting. However, there are few indications that replanting efforts are under way at any scale similar to that in wine.

Apple juice concentrate is a growing market internationally, and Moldovan producers have begun to respond to the emerging opportunities. There has been some investment in new processing technology by some of the larger producers to meet standards. Roughly 70-80 percent of all apple juice is going to the EU. The pattern actually mirrors that of fresh apple exports to Russia: total exports to the EU dropped from US$20.8 million in 1998 to US$2.4 million in 2000, and has since climbed to US$9.9 million.

**Figure 11: Apples—Moldova and its Competitors in the Russian market**



## Walnuts

Moldova is the third largest supplier of shelled walnuts to the EU, and has been holding its market share (while Ukraine has been gaining), as illustrated in Figure 12. The exports to the EU apparently include some processing services, since France is exporting unshelled walnuts to Moldova, roughly worth US$1 million per year.

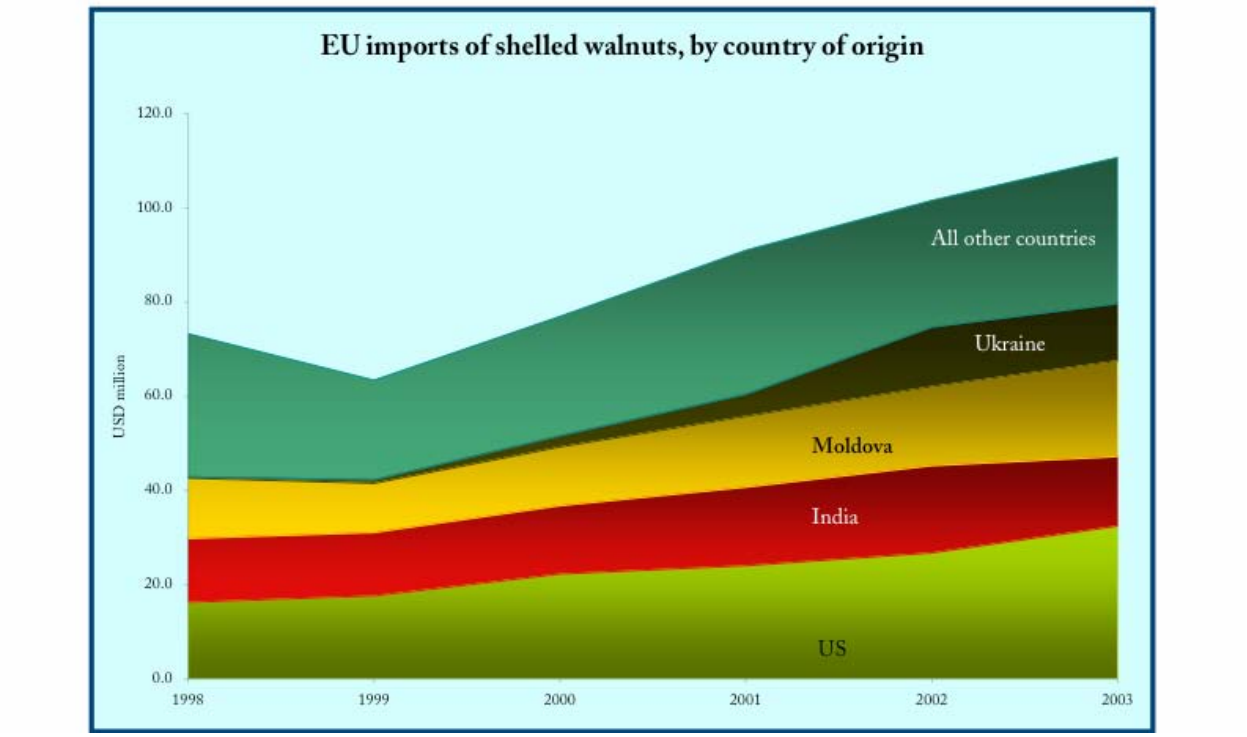
The walnut success story has some serendipitous elements to it. Under the Soviet system, walnuts were not officially recognized as a crop, trees were planted primarily as windbreakers, and production was haphazard. However, Moldovan climatic and soil conditions are ideal, and walnut production has grown rapidly over the last few years, from zero in 1993 to US$22 million in 2003. The low labor costs makes Moldova price-competitive in the market for whole kernels for confectionary production. In addition, the quality of the product, in terms of size and protein content, is high.

The value chain goes from producers to regional merchants, who purchase the walnuts and transport them to the processing centers, mostly in Chisinau. The number of processing and exporting centers reportedly rose from 27 in 1998 to 58 in 2000, but the number has since dropped. Most of the remaining 15 enterprises are regional suppliers to a couple of larger exporters.

The shelled walnuts are then shipped to the EU, mostly France and Greece. In addition to some of the re-exports of shelled walnuts coming from the EU, there are also reports that significant quantities are coming in from Ukraine, and are then being re-exported to the EU under the preferential arrangement. Trade statistics, however, show relatively small amounts (US$228,000 in 2003). Moreover, the rapid increase in Ukraine's market presence over the last few years suggests that the country's exporters have developed their own market channels into the EU.

Moldovan producers have some access to the EU market under the Generalized System of Preferences (GSP). The country has received further concessions—the only CIS country to do so—because of its adherence to International Labor Organization (ILO) conventions. Under these rules, walnuts (and other agricultural products) can enter the European market duty-free. This preferential access, combined with the quality of the product and compliance with applicable standards, has played a major role in expanding exports to the EU.

**Figure 12: Walnuts to the EU — Moldova and its competitors**




There is currently interest in expanding production by establishing new formal plantations. In addition, some initiatives seek to add value. One investor has established a plant for producing glazed walnuts for exports. Other possibilities include the production of pharmaceutical products using the shells and, eventually, even the production of walnut oil.

## LIGHT INDUSTRY

### Textiles and Apparel

#### *Overview*

The structure of Moldova's textile and apparel cluster in many respects exemplifies the notion of the "two Moldovas," one largely stuck in the past, the other seeking to compete more aggressively in global markets. The larger companies are shells of the Soviet-era behemoths, built to meet the needs of the USSR as a whole. The collapse of the Soviet Union all but annihilated their markets and severed their economic linkages. Constantly teetering on the brink of bankruptcy, they often survive only by gearing up for production when orders come in, and closing down once the production run is completed. That business model shifts much of the risk to the workers, who continue to depend on these temporary jobs, given the overall economic situation that offers few alternatives.

However, the restructuring of the sector has created a number of medium-sized companies, often in the form of joint ventures with partners from EU countries. The owners and managers of these enterprises are adapting to evolving market architectures, taking steps to upgrade their activities beyond pure processing services. With these growing capabilities, Moldova's apparel sector represents competitive potential; yet structural problems may block its realization.

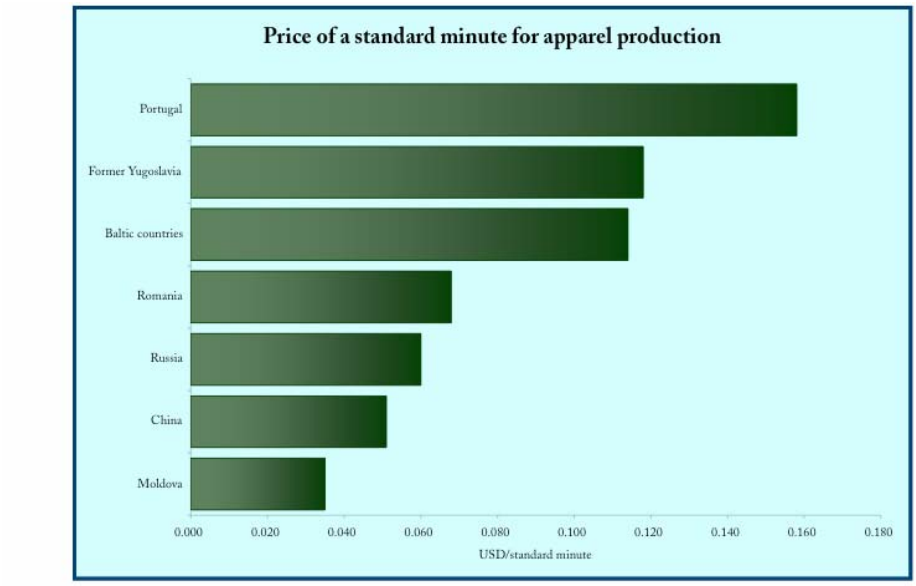
In 2003, Moldova exported some US$167.6 million of textiles and apparel; textiles accounted for US$38.4 million of the total, and apparel for the remaining US$129.2 million. Roughly 70 percent of apparel exports go to the EU, and the United States accounts for almost all of the remainder. For textiles, the EU's share in total exports is about 60 percent of textiles, with much of the remainder going to Russia and other CIS countries. Textile exports to the EU consist primarily of household items, such as bed linens, almost exclusively produced in Transnistria. Apparel exports are mostly CM (cut and make) processing—or tolling—services for foreign partners; current estimates put the local value-added in total exports at around 35 percent. However, several firms have upgraded to include design, and to move into private-label production.

## *Competitive Advantages*

Moldova would appear to have a competitive advantage on three dimensions, with workers in effect paying the price for the first two. First, because of excess capacity and low labor costs, Moldova's apparel industry offers an attractive combination of productivity and cost. One method used in the apparel industry is to standardize the value of different pieces of apparel in terms of the time required for production. As a recent study conducted under the auspices of the World Bank's Moldova Trade Diagnostic Study puts it: "International buyers normally know exactly how many standard minutes their products contain."[4] Applying these standard minutes to labor costs makes it possible to adjust for productivity differences. On that score, Moldova's apparel industry outperforms its key competitors, including China. Figure 13 shows a comparison of the cost per standard minute in the apparel industry for selected countries.

[4] Heiki Mattila, *Case study: Textiles and apparel, Moldova Trade Diagnostic Study*, November 2003; p. 11.

**Figure 13: Cost per standard minute in the apparel industry**




Source: Mattila, ibid.

Moldova's second advantage derives from the persistence of excess capacity and the lack of alternative employment opportunities that allow for quick responses to incoming orders. Laid-off workers can be recalled on short notice to fulfill a particular order.

Third, Moldova's geographic location between East and West confers a potential advantage of speed to market. As its neighbors to the west are becoming integrated into the European Union, buyers there are looking further east, but are still seeking to retain geographic proximity. The potential speed to market may in fact favor Moldova when quotas are phased out completely by January 1, 2005.

Moldova's apparel producers have been gaining market shares in recently (2001-2003) growing EU markets. These product categories account for US$73.2 million of apparel and textiles exports, or just about US$50 million without the bed linen (HS 6302) produced in Transnistria. For another US$32 million, Moldova's apparel producers have been losing market in growing EU markets.

### *Constraints*

Weaknesses in the transport services sector, especially trucking, have led a number of apparel producers to acquire and operate their own trucks. This pattern is a symptom of critical bottlenecks in the value chain for a key export article. Normally, the skills required to operate a competitive apparel or textile operation are quite different from those for transport services providers. If apparel manufacturers find that they can operate the needed services at a lower cost or with higher quality or reliability, there is a clear issue of either incentives or capacity, or both. While this assessment did not study the road transport sector in any detail, one of the barriers to its modernization is the lack of appropriate financial instruments or services, such as leasing.

As in other sectors, and well documented in the *Cost of doing business in Moldova* survey, policies and administrative practices add to the cost of production. These additional costs are reportedly significantly higher than in competitor countries. The apparel sector case study under the recent World Bank Trade Diagnostic Study identified the following policy-related cost items:

- Delayed VAT reimbursement;
- VAT payable on cutting waste (which can account for as much as 25 percent of imported materials);
- Additional personnel costs to handle bureaucracy;
- Customs charges.

The study estimated that these policy-related costs add over 20 percent of the value added to the the *free on board* (FOB) price, that is, the price of a traded good excluding the transport cost, of garments produced in Moldova. The World Bank study also included Chamber of Commerce charges for such items as Certificates of Origin, export licenses, and the like, as a cost element. Our own research, however, suggests very strongly that these processes have been streamlined to an extent that exporters do not consider them in the least onerous.

### *Assessment*

Moldova's producers, typically with foreign partners, have shown that they can leverage the country's advantages in low-cost, high-productivity labor and a location favorable to sophisticated apparel markets. At the same time, some larger producers remain mired in the low value-added segment of the cluster, limiting themselves to Consequence Management (CM) operations. Moldova could serve as an exporting platform to both the West and East, but this transformation will require significant changes in the business environment, creating greater incentives to move up the value-added ladder than penalties for innovative activity. The rigidities in the system, and the poor performance of the financial system, preclude the emergence of supplier industries that could provide greater backward integration.

## *Hides, Leather, and Leather Goods*

Skins, leather, footwear, and leather goods are among Moldova's rising stars in the EU. However, export performance is highly concentrated. There is one state-owned producer of shoes (*Zorile*) that accounts for virtually all of the exports to the EU (Germany and Italy), working under contract to an Italian and a German shoe firm, a major brand. Altogether, the company is producing roughly 1 million pairs of shoes per year; it accounts for 13 percent on average of the German firm's outsourced production. The activity is limited to assembly, with all materials and inputs imported duty-free under the EU's *Outward Processing Traffic* protocol. The current arrangement reflects in part a learning process. Following independence, *Zorile* sought to compete in external markets on its own, only to be brought to the brink of bankruptcy; it survived only because of the lack of an effective bankruptcy system in Moldova. It is now considering the working arrangements as a kind of apprenticeship for surviving in global markets, and perhaps to move to higher value-added activities as a new generation takes over. For now, the contracts provide steady employment for the workforce, although there remains considerable excess capacity.

Similarly, all leather exports (not shown in Figure 6, because the total value in 2003 was only US$1.1 million) to the EU come from the country's only tannery, an Italian-Moldovan joint venture, with the Italian partner holding an 80 percent stake. The tannery started with wet blue production, but has since graduated to producing leather meeting European quality standards. The Italian partner handles all distribution in the EU.

Moldova has been capturing market share at a high rate for raw hides and skins, which are in high demand worldwide, driven in part by the demand for leather seats in cars. The exports of raw hides and skins, typically only minimally processed (preserved), have on average more than doubled every year between 1999 and 2003.

One striking aspect of the structure of the leather cluster is the effective lack of integration. The structure of the sector is characterized more by vertical relationships with the companies' foreign partners than linkages among the cluster elements. For example, virtually all of the leather produced by the tannery is exported. Shoe producers aiming at the local market—including *Zorile*—source their leather from Turkey, since there are no other tanneries in Moldova that produce leather suitable for shoes, although two small ones are reportedly coming on line. There is a small operation in Chisinau that imports and distributes other materials needed in shoe production, including some leather. The exporters of raw hides and skins source their merchandise from local suppliers as well as from Ukraine, relying on networks dating back to Soviet times. Again, Moldova has an edge in terms of access to the EU. In turn, the local tannery sources very little in the way of its raw materials locally, relying instead more on Ukraine.

Many elements of the cluster, in particular domestic shoe producers, are operating on the edge of the informal sector, even if they employ 25 or 30 people. Their margins are small and pressure from imports, especially for summer shoes, is intense. Efforts to upgrade and compete more effectively are hampered not only by the business environment, but also by the weak performance of the banking system, which provides no intermediation, leaving producers and suppliers to come up with their own arrangements.

Clearly, Moldova has certain advantages in this sector—skills, an ample supply of raw materials, and a good location. Moreover, Moldovan producers are demonstrating that they can meet quality standards in one of the most sophisticated markets in the world. Yet leveraging these advantages requires appropriate changes in the regulatory environment to reduce transaction costs, and to encourage better services from the financial system.

## INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)

### Overview

The information and communications technology (ICT) industry in Moldova is one of untapped potential. During the Soviet era, Moldova was a center for technology in electronics and military production. The region developed a high concentration of skilled professionals in physics,

mathematics, and engineering. Moreover, Moldova has a long history and culture of technical innovation. Much of this culture and capacity still exists. Consequently, the country possesses a large computer- and technology-related talent pool, with capacity for much greater achievements.

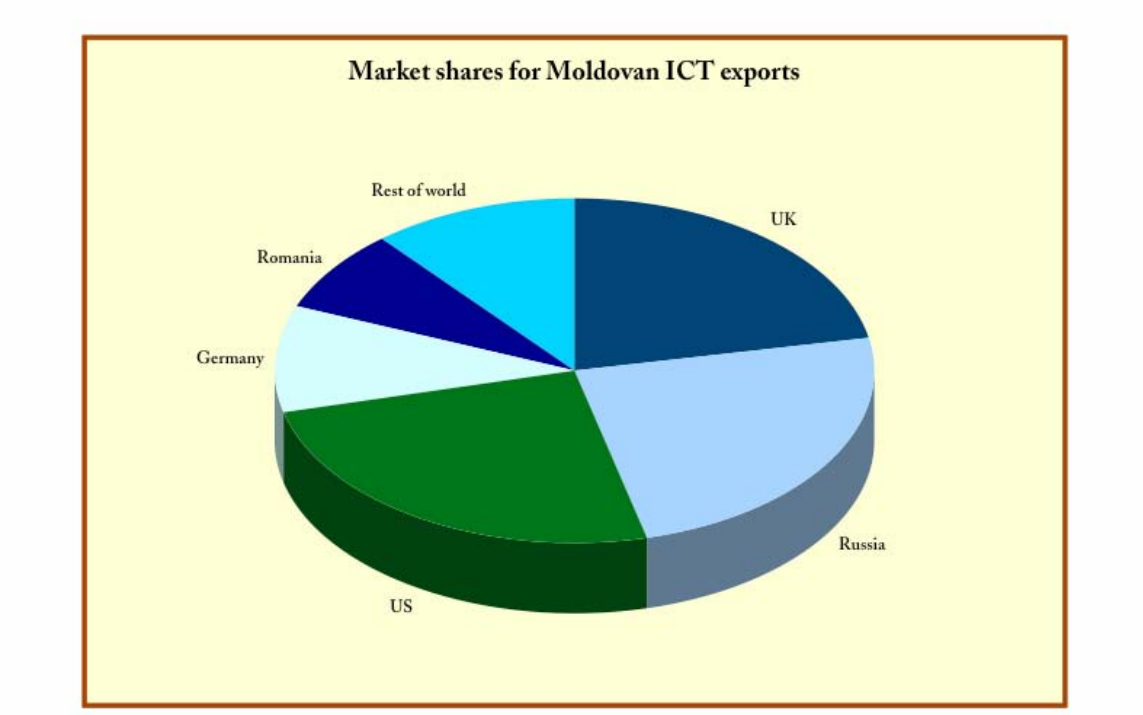
There is growth in the cluster, driven by demand for high-tech products and services across Western Europe, Russia, and the United States. Moldova possesses substantial competitive advantages in the international market from its pool of skilled labor, at costs that are lower relative to other western nations. Moldova is also the only country fully bilingual in a Romance and a Slavic language. With little domestic demand, the ICT cluster's focus is decidedly towards exports, but the contribution to total export proceeds is small, estimated at around US$13.4 million (2003). Moldova is, in fact, a net importer of computer products and services, with the exception of data base development.

There are a number of companies providing services to markets in Europe and the United States. These companies have grown rapidly, indicating strong demand for these specific services, so it can be assumed that at least a few companies are meeting global benchmarks for innovation.

An estimated 70-90 percent of ICT activities are conducted in the "shadow" market. As the largest impediment to growth in the ICT sector, the huge shadow and "black" markets have two significant impacts on the ICT industry. First, the market creates a disincentive for companies in Moldova to produce software for local consumption. The low cost of pirated software drives the price of products so far down that Moldovan companies are not able to recover their development costs or make a profit. Secondly, and perhaps more importantly, the black and shadow market is a major deterrent to FDI.

There is also surprisingly little cooperation in the industry. Moldova has no ICT association to provide a unifying force for collaboration and advocacy. There are no professional societies, clubs, or other groups to facilitate communication and the sharing of ideas. This fragmentation has left the companies in the industry isolated and self-dependent. Some companies focus exclusively on exporting, without any attention to or association with the local market.
The three major export markets for ICT products and services are the United Kingdom, the United States, and Russia, as indicated in Figure 14.

**Figure 14: Principal export markets for Moldova's ICT cluster**




## Toward a Growth Strategy

Moldova's ICT cluster can draw on some strengths in seeking to compete more effectively. Yet the sector is caught in a vicious cycle. The way the sector is operating, or is forced to operate, keeps it from pursuing value-added opportunities. Moreover, the structure of the sector and the nature of the transactions means that skill formation falls behind, and de-skilling occurs. To break that vicious cycle, four major actions are needed:

- Advance government regulatory reform and raise commitment to the promotion of a truly strategic industry.
- Create and foster the growth of an industry society or associations to spur innovation, give the sector a voice, and build the foundation for cluster strengthening.
- Increase quality and credibility throughout the Moldovan ICT cluster.
- Improve international market access.

# A Concluding Word

Our assessment of competitiveness in the Moldovan economy clearly shows potential. The performance of selected activities in competitive export markets is testament to the resilience of the country's entrepreneurs and managers. Moldovan products and services are gaining market share in growing markets, for whatever reason. However, the analysis also underlines the importance of concerted action in key clusters, such as wine, to respond to changing market architectures and leverage the competitive potential of the economy.

One theme runs through the analysis of all clusters that have shown promise in the recent past: the business environment imposes additional costs and deters investment. Adhering to policies and administrative practices that retard or reverse economic growth is akin to shooting yourself in the foot. While more initiative is needed among the economic agents within the clusters themselves, a coordinated effort to improve the investment climate can yield significant returns, complementing and augmenting initiatives at the cluster level.

# MARKET LINKAGES AND SERVICES

## Wholesale and Retail Operations

### *Overall Deficiencies in Market Architectures*

Services make up about 75 percent of the total value created in an economy, less in developing countries and particularly in transition economies. Much of that share is included in the final price of tangible goods. On average, one-third of the economic value reflected in the sale price of a consumer good is generated by the transportation, wholesaling, and retailing functions that deliver a good from the producer into the hands of a buyer—the operating elements of a country's market architectures[1]. When such services in a country do not exist, are inefficient, or are provided by a monopoly, the cost of producing goods increases, consumers pay more, and productivity suffers, as does the competitiveness of companies in that country. As global competition increases, global retailers increasingly make decisions about where to source the production of their goods on the basis of how reliable, efficient, and available are in-country services to support the export of products. Companies in countries with poor services must find ways to provide them or improve them. Export and industry associations and clusters are in a good position to drive efforts to improve the service sector within a country.

Weaknesses and gaps in the country's market architectures, along with difficulties in adapting to the evolving market architectures in global markets, impair the competitiveness of Moldova's economy. One of the biggest contributions that cluster-oriented interventions could make in Moldova would be to bring together the value chains across industries to help the various actors understand where there are missing links, limited services, and major inefficiencies that could be solved with coordinated actions. There is a shortage of wholesalers, retailers in nonfood products, full-service logistics companies, and trucking companies with international permits. The monopoly railroad service provider is reportedly charging higher rates than its competitors in neighboring countries. Women with small retail operations in the state stores are not getting discounts from wholesale buyers because they travel by bus to department stores in foreign countries and buy at retail prices. Popular supermarkets are so powerful that they sell Moldovan products on consignment because there are no equally powerful Moldovan wholesalers; instead, individual farmers deliver their own goods to food stores.

When large foreign-owned supermarkets, department stores and furniture stores enter the Moldovan market, they should do well, given the current lack of large convenient retail space. Even if foreign retailers wanted to source products locally, it would be practically impossible, given the underdevelopment of middleman functions in the value chains. As a result, foreign retailers would need to import foreign goods, because it would be more convenient and more efficient. Moldovan producers would be left out in the cold. The large

[1] William W. Lewis, *The Power of Productivity*, The University of Chicago Press, Chicago, IL, 2004.

supermarket and wholesaler, *Metro*, which is expanding its presence across Central and Eastern Europe and the former Soviet Union, commissioned a research study on the Moldovan market. It found that 87 percent of hotel, restaurants, grocery stores, mini-markets, and institutional buyers would buy from *Metro* if they came into the market, dramatically demonstrating the need for wholesalers in the market. A potential Moldovan dairy supplier to *Metro* reported that *Metro* decided to delay its entry into the Moldovan market because so little could be sourced efficiently from Moldovan producers; *Metro* has minimum requirements that Moldova cannot yet meet.

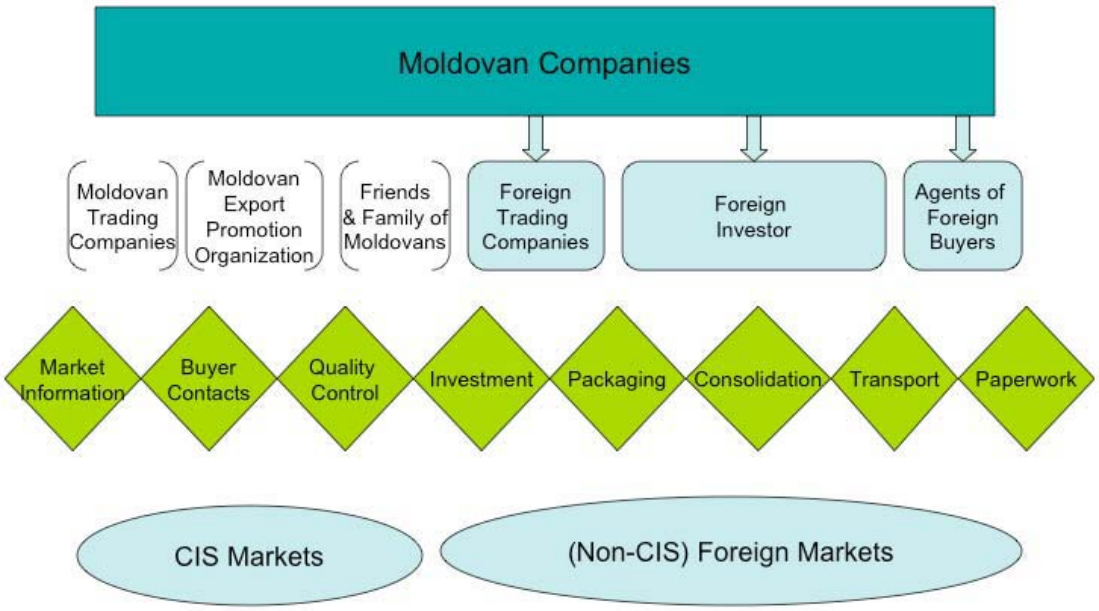
Part of the problem in Moldova is that market intermediation functions—wholesale operations, in particular—are viewed with suspicion. The belief that the middleman adds little value relative to cost may be a remnant of Marxist thinking, or may date back to the period following the collapse of the Soviet Union, when wholesalers were few and their markups high. In any case, the Moldovan government often changes the rules for wholesalers, making the business environment unstable and unpredictable. For example, in May the government passed a new regulation requiring wholesalers that handle alcoholic beverages to have a minimum 5,000-ton storage capacity and to obtain a license. This requirement closed down all of the small wholesalers unable to meet it; many of them had relied on revenue from alcoholic beverages to remain profitable.

A number of Moldovan producers either do not understand the advantages of outsourcing the distribution function, do not want to give up the margin (by selling to a distributor at a discount), or have margins too low to be able to afford to sell through distributors. The resulting decision limits their efficiency and reach into the market since most producers are not expert in distribution or managing the channels. Small retailers buy through wholesalers because the wholesaler can offer them attractive terms of payment (up to US$10,000 in credit or 30-day payment terms) that producers—Moldovan or foreign—cannot or will not offer. As a result, the only Moldovan products sold in smaller stores are those carried by the wholesalers. Moldovan producers that do not use wholesalers simply do not get their products into many of the smaller stores.

### *Export Channels*

To export, companies need to understand the evolving market architectures in target markets—the market opportunities, the potential buyers and intermediaries, the purchasing criteria of the buyers (product specifications and standards, price range, quality level, certifications, and so on), and, generally, rules of doing business. Often, to meet the purchasing criteria, major or minor investments are required to change equipment, acquire needed certifications, achieve quality improvements, improve reliability, or effect design changes. The logistics of shipping the goods to the importer has its own set of challenges: packaging, reliable transportation to make on-time deliveries, and correct paperwork to speed customs clearance and delivery to the end buyer.

**Figure 1: Market architecture for exports**




Almost all of the Moldovan companies that were successfully exporting to non-CIS (Commonwealth of Independent States) countries were working with or through a foreign partner. At least in the first years of the partnership, the foreign partner typically provided all of the services mentioned above—market information, buyer contacts, investment, and logistics support. Foreign partners sometimes transferred the responsibility of logistics support to the Moldovan partner once they understood the requirements, but Moldovan partners usually do not get involved in the marketing, continuing to rely on their partner to find new markets, negotiate the deals, and provide the investment or new equipment, when needed.

There are examples of Moldovan companies exporting directly, without a foreign partner—they were either assisted by the Moldovan Export Promotion Organization (MEPO), a donor project, such as the Marshall Plan, or work through family and friends who have moved overseas and can help them find them contacts. There are also companies that ventured into foreign markets on their own in the initial euphoria of economic freedoms, but soon found themselves teetering on the brink of bankruptcy. Moldovan producers appear reluctant to engage trading companies that appear as intermediaries to help them find buyers, distribute their products, and handle the logistics.

**Competition Lowers Prices Charged by Wholesalers**

One of the medium-sized wholesale bases serving the Chisinau region used to make a 25 percent margin when there were only three such bases providing this service, after Moldova first became a market economy. Being able to connect buyers and sellers was a service in high demand, but there were also low barriers to entry. Competition increased and today more than 40 wholesalers are active in the Chisinau region and their margin is about 2-4 percent. Since competition is also high among the retail stores, the consumer benefited from the price reduction.

## *Import Channels*

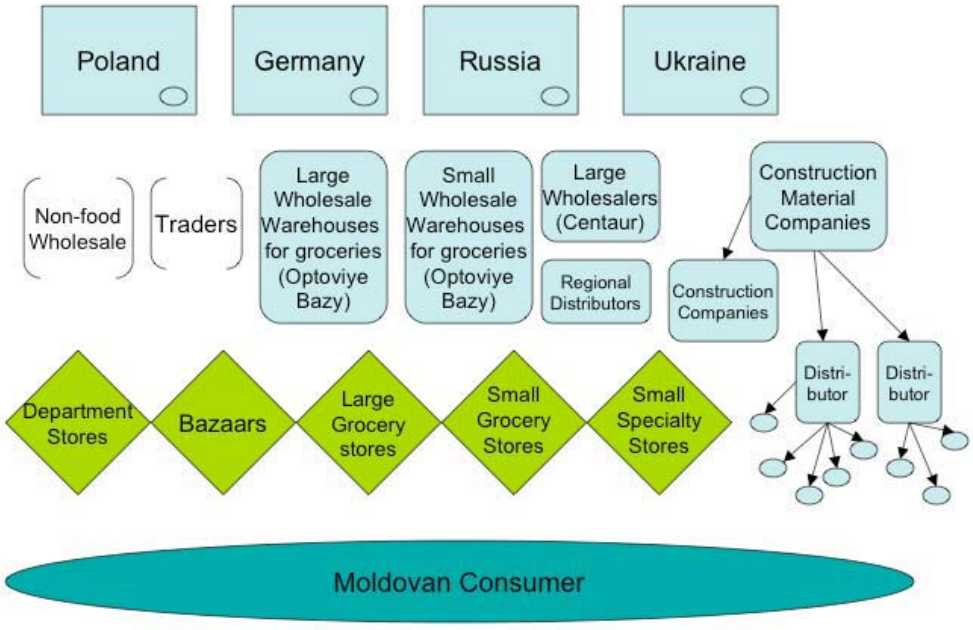
The market for selling foreign goods in Moldova is somewhat more sophisticated, but there are still major

gaps in the nonfood retail market (clothes, shoes, home furnishings, and accessories), with almost no Moldovan wholesalers active in the value chain and few large retail establishments that take delivery of goods and hold inventories, as illustrated in Figure 2. The retail chains do not need to offer this service since competition among them is limited and suppliers are numerous. Limited competition at the retail end is one of the reasons that at least one of the large wholesalers, *Centaur*, has forward integrated (that is, expanded to related areas to fulfill customer needs more directly) to open its own retail operations. It has also led a number of producers to sell through factory stores or open their own retail operations. These arrangements greatly limit productivity in the retail sector and argue for coordinated action and cooperation among producers.

## *Food and Beverages*

The distribution of imported food and beverages is fairly well organized, with a variety of channels serving supermarkets, smaller grocery stores, and minimarkets. Although the number one supermarket uses foreign *fournisseurs* (suppliers) to purchase, consolidate, and transport shipments of a variety of food and nonfood goods sold in its store, other grocery stores find imported goods through large Moldovan wholesalers or the network of Moldovan wholesale bases (*optoviye bazi*). Foreign companies selling fast-moving consumer goods, such as beverages, snack foods, and cigarettes, are diligent at developing their channels throughout Moldova, using wholesalers to get their products into supermarkets, minimarkets, and kiosks. Reportedly, a wide range of imported goods is available for purchase at kiosks and small outlets throughout the country outside of the urban centers, while the range of Moldovan products remains limited, even though prices of imported goods in the smaller cities and villages are 20-40 percent higher than in Chisinau.

**Figure 2: Market architecture for imports**



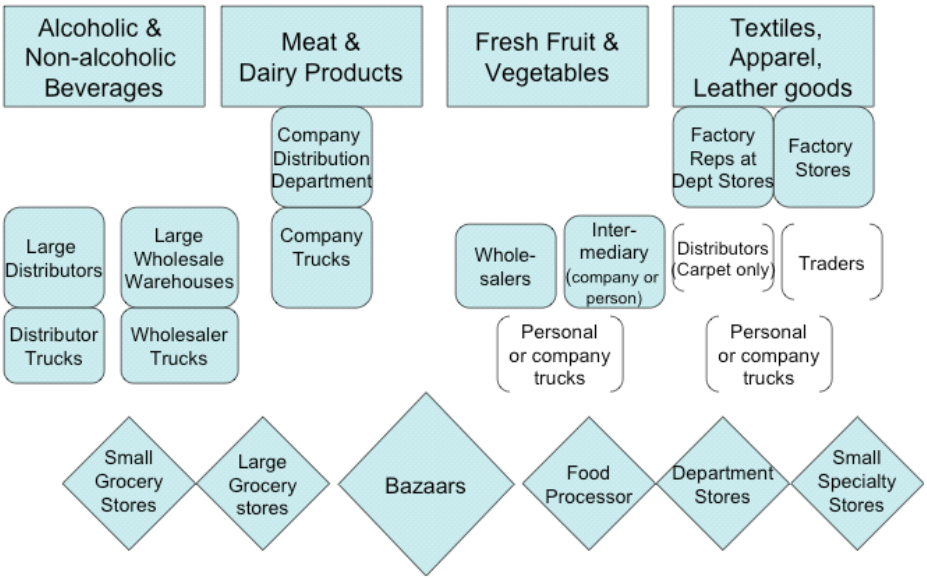
### *Consumer Durables*

The existing large retail establishments (*TSUM, Gemini, Elat, Sun City*, and *Grand Hall*) rent out small areas of space to individuals or individual companies. The individuals (traders), often women, typically purchase their inventory at retail prices in nearby countries (Poland, Hungary, or Slovenia), on trips to Dubai, or at the Odessa port, where containers filled with goods from a variety of countries, including China and Turkey, are opened and displayed at a bazaar near the port and sold in large lots. The shortage of custom warehouses means that small and medium-sized importers do not have access to custom warehouses, which would help them better manage their cash flow, since they would be able to pay duties and VAT on the goods as they use them rather than all at once at point of entry. This requirement puts pressure on working capital, and explains at least in part why small importers prefer to bring goods in by bus or their own truck and cars, thus avoiding the tax altogether. Of course, what they may gain in avoided taxes, they certainly lose in buying goods at retail rather than wholesale prices. Surprisingly, there are no distribution firms that trade in clothing, textiles, or shoes[2]. In the case of imported shoes, for example, individual importers get their (cheap) products to sellers operating market stalls.

## Domestic Market Channels

Moldovan companies compete globally every time consumers have a choice of imported versus domestically produced products. The lack of channels or lack of interest in using channels puts Moldovan producers at a disadvantage.

**Figure 3: Market architecture for domestically produced goods**




[2] Confirmed by market research undertaken by Metro Cash & Carry International.

## *Food and Nonfood Groceries*

The large wholesalers and wholesale bases are set up to distribute Moldovan-made grocery products and function fairly well in this capacity. As competition increases among them, they are beginning to specialize, in order to buy higher volumes of a narrower range of products at lower prices. These trends are welcome and they increase the competitiveness of these services and the efficiencies in the value chain. Wholesalers are also buying the property on which their warehouses are located, as an investment and to avoid the leasing charges that cut into their margins. Large and medium-sized wholesalers prefer not to sell to smaller stores because smaller stores usually need 30 days to make payment and the wholesalers generally have to make payment upon delivery or within 3-4 days, maximum. It is therefore the smaller wholesalers that are serving the small stores. Our interviews with owners and managers of small stores indicate that they spend a good deal of time and effort trying to find the lowest cost goods from wholesalers that will extend them the payment terms they need. Both the small stores and small wholesalers are getting crowded out of the market. If some operation like *Metro* were to come into the market, it would provide strong competition to the current network of wholesalers, but might benefit the smaller stores, especially if it provided 30-day terms of credit.

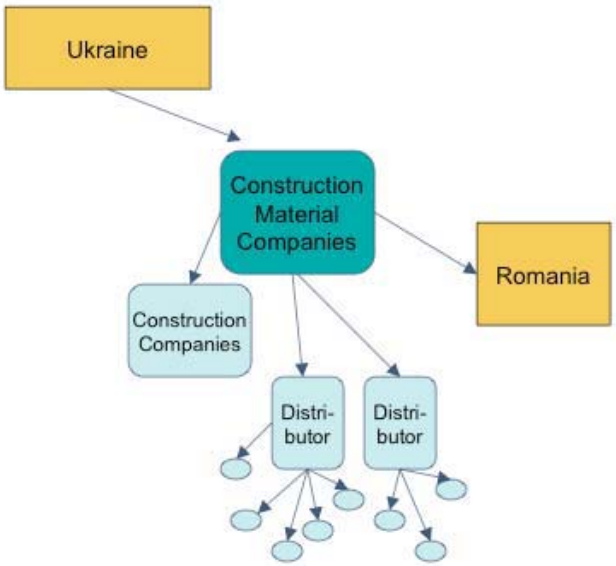
Bakeries and dairy and meat suppliers handle their own distribution. Many of them operate their own, or leased, trucks with their own drivers. This helps to ensure on-time deliveries for goods that need to be fresh. One dairy company has offered its distribution services to beverages companies as well as yogurt and canned goods companies. A few have taken them up on the offer, but others prefer to sell their goods at the bazaar or are not prepared to increase their volumes (although they have the capacity) to meet the higher volume of orders. Meat suppliers make extensive use of the bazaar to sell their products and a variety of customers buy their meat there.

A high percentage of food items (approximately 50 percent) are sold through the bazaars or municipal markets. Farmers, their representatives (friends or family), or individuals who travel by train to agricultural areas to buy produce, set up their goods at the large bazaars in the center or outskirts of Chisinau, as well as in other cities. Hotels, restaurants, and cafés reportedly buy 40 percent of their fruits and vegetables and 35 percent of their meat at the bazaar. Grocery stores and minimarkets buy 50 percent of their meat at the bazaar. However, according to market research conducted by *Metro*, **between 65-85 percent of institutional buyers would substitute *Metro* as their wholesale supplier for fresh food, dry food, and nonfood groceries, if given the option**.

## *Construction Materials*

Our research indicates that the construction materials industry has the most sophisticated market access channels, with several levels of distributors organized geographically. Producers sell their products at two discount levels so that the final prices of their products are the same to final consumers no matter where they buy hem. The construction materials companies with which we spoke used their own trucks for transport because this was cheaper and more reliable.

**Figure 4: Construction materials distribution**




## *Clothes, Shoes, and Carpets*

Several of the better known apparel and shoe factories have factory stores located next to their factories (such as *Ionel*, *Zorile*). Even smaller domestic producers operate their own retail stores. Both carpet manufacturers, *Coavare* and *Floare* have a retail operation at their factory sites as well as in offices in downtown Chisinau. Moldovan clothes, shoes, and carpets are also sold in retail spaces at TSUM, the state store. The Moldovan apparel being sold in Chisinau retail stores comes directly from factories, is typically of poor design, is not known for its high quality, and has few buyers. The best places to buy clothes produced in Moldova are the outlets of factories known for good quality and decent designs. If traders are interested in buying Moldovan products and selling them in GEMINI, it appears that they could do this; but most prefer to sell imported items.

## *Furniture*

We expect the demand for furniture in Moldova to boom as Moldovans furnish the houses and apartments they are building, refurbishing, and buying. There are few Moldovan companies poised to fill this growing demand and we expect foreign imports to fill the gap. The Moldovan furniture companies already benefiting from the building boom have limited retail options. As a result, one successful factory in Balts has opened five of its own retail shops, sells via a catalog and the Internet and runs large advertisements in the local newspapers directing potential customers to their web site and telephone number. They sell both customized and standard furniture, with their main competition coming from Poland. Others rent small retail areas at TSUM.

## Transportation Services

### *Overview*

There are no Moldovan companies that offer more than one transport mode, cargo handling, and related information services. There are a limited number of Moldovan trucking companies, freight forwarding, warehousing, and other logistics-related services—and not much competition among them. Only a few of these companies have international experience and none of the major international logistics firms have established operations in Moldova. Foreign firms regard Moldova as a "logistically unfriendly" place, with complicated customs regulations, unpredictable rules and procedures, and often corrupt practices. As a result, the quality of services is low and the prices are high. According to the World Bank's Moldova Trade Diagnostic Study, total logistics costs in Moldova are about 22 percent of Gross Domestic Product (GDP)—the highest in Europe. The corresponding figure for the EU accession countries is between 10-16 percent of GDP. Domestic distribution is poorly developed: there are no logistics operators that offer a countrywide terminal network or regular parcel services.

Over 80 percent of Moldova's exports and over 66 percent of its imports are time-sensitive goods. *Just-in-time* European producers are increasingly sourcing from nearby Eastern Europe and Moldova, but they require on-time deliveries of inputs. Manufacturers assembling electronic and mechanical goods require accurate inbound shipments of components, careful inventory management practices, and accurate paperwork. The fashion industry is highly time-sensitive and requires that producers of ready-made garments deliver on time and quickly. The home furnishings industry, including home textiles such as tablecloths, napkins, and bed linens, is also becoming fashion-oriented and thereby more time-sensitive.

Unfortunately, delays at the Moldovan border crossings are notoriously lengthy. "While total border crossing waiting time is usually around 5 to 15 percent of total transport time in import and export to and from Romania, Bulgaria, Bosnia and Herzegovina … it tends to be 30 to 50 percent in Moldova in comparable cases." Border delays and time-consuming paperwork severely reduce Moldova's competitiveness in trade and in the goods they trade. As a result, imported items become unnecessarily costly; firms must hold higher inventories, reducing their efficiencies and raising their costs; and Moldovan exporters lose their competitive advantage in fast and on-time deliveries and are thrown back to competing primarily on cost—exploiting an elusive advantage.

### *Trucking*

There are three types of operators in the Moldovan trucking industry: (1) operators with multilateral permits that allow them into Europe and with some equipment complying to EURO standards, (2) operators with aging equipment meeting CIS standards and having bilateral permits into CIS countries, and (3) domestic operators with old equipment and no permits allowing them to bring good into or out of Moldova. There is excess capacity in the last two categories and a shortage in the first category. And the operators with multilateral

permits do not have enough trucks to take advantage of the permits. There are barriers to entry because of (1) the shortage of road permits, (2) the capital needed to invest in trucks complying with EURO standards, and (3) the strong market position of incumbents. Transportation companies in neighboring countries have been renewing their fleets to meet higher EURO standards, financed mostly through leasing arrangement. Moldovan companies rarely use leasing because of its limited availability and high interest rates. They prefer to buy new equipment with equity, but they are doing so at a much slower rate then their international competitors. The competitiveness of the trucking industry—and of the exporters who are relying on road transport—suffers from the lack of suitable financial instruments, in particular an effective leasing option. The small and medium enterprises development project BIZPRO/Moldova has begun to work with financial institutions to develop more innovative instruments and services. The trucking sector is a specific target for these initiatives.

### *Railroad*

Rail transport is used for trade with CIS countries and domestic traffic, but not for trade with western countries, with the exception of Romania, because of the different rail gauge and complicated connections. Moldova's monopoly provider, CFM, was restructured towards a market-based strategy. It started making a profit in 2000 and its profits have been climbing steadily, based mostly on the high rates it charges for exports.

### *Air Freight*

Most scheduled air cargo takes off and lands outside of Moldova (in Budapest, Kiev, and Bucharest) and cargo is trucked in and out of Moldova. Air cargo could be transported in the holds of scheduled passenger flights through Chisinau airport, but little is. Cargo handling is the monopoly of the airport. The only competitor that had operated there went bankrupt in February 2003. The cargo handling is deemed poor by freight forwarders, cargo release is often postponed a day or two to include extra charges. Half a dozen Moldovan cargo airlines exist, but run questionable operations (reportedly including illegal arms trafficking in Africa) and are rarely used. They use Soviet-era cargo aircraft and do not operate any scheduled routes.

Moldova's uncompetitive transportation services explain why only a few of the companies we interviewed outsourced their transportation. Over 40 percent of respondents in the Exporter/Importer survey for the World Bank study indicated that they provide their own transport.

## Summary

Cluster-oriented approaches to building a more competitive economy in Moldova might include such activities as the following:

1. Organize to understand the gaps in value chains, particularly the need for wholesalers, distributors, and retail stores for nonfood items and encourage entrepreneurs to provide these business services.
2. Organize to lobby for better customs/border crossing procedures.
3. Organize to examine the basis for rates the railroad charges for exports, and develop alterative rate schedules, if appropriate.
4. Organize to understand the need for better (specialized) transportation services—make wholesale changes related to permits, treatment of foreign companies, leasing arrangements, and the like.

# QUALITY ASSURANCE INFRASTRUCTURE

## Introduction

An effective and efficient quality assurance infrastructure is a prerequisite for economic development in any country. Global trends—the unification of markets; global industrial integration, including relocation of production and outsourcing; increasing demand for higher quality; and environmental protection—are increasingly becoming dominating factors in the strategic thinking and design and implementation of economic development policies at the national level. In this world, a harmonized and internationally recognized quality assurance infrastructure is one of the key elements shaping the competitiveness of a country's economy, for it facilitates the exchange of goods and services in an efficient, timely, and economic manner, reducing the overall cost of doing business with economic agents in that country.

The basic elements of a quality infrastructure are standardization, metrology (the science of measurement), conformity assessment, accreditation, and market surveillance. Planning for and developing these elements is a matter of national economic development strategy. Establishing the organizational entities, developing their service capacities in strategic national sectors, and ensuring the ability of this infrastructure to adapt quickly to changes in target markets and global trends comes about only through careful planning supported by knowledge of international best practices and requirements in this field.

These basic elements are like links in a chain. If one element comes up short in its overall operational capacity or in its ability to serve the needs of a given sector, the impact on overall trade and that sector's performance is easily felt in reduced exportability of goods and reduced proceeds.

An effective quality infrastructure is also necessary to safeguard the safety and health of citizens, protect the health of animals and plants, and protect the environment. Technical regulations and enforcement mechanisms, including market surveillance that ensures the safety of goods, services, and facilities, are key to meeting these needs. To the extent that these technical regulations reflect internationally harmonized standards, the infrastructure of laboratories and certification schemes aimed at domestic constituencies also facilitates trade and encourages foreign direct investment (FDI).

As a transition economy, Moldova has a quality infrastructure designed to meet the current market entry requirements of CIS countries, but faces many challenges in being recognized by countries outside the CIS. This lack of recognition acts as a barrier to export for many Moldovan products that could be competitive in the EU, the United States, and other countries around the world.

## Quality Assurance Infrastructure of Moldova

The Moldovan quality infrastructure is complex and fragmented, making it difficult to adapt to changes in target market entry requirements. However, it is evident that the Moldovan government has taken some concrete steps to reform this structure. Actions include regulatory reforms and initial steps to reorganize its quality infrastructure institutions.

Regulatory reforms include a new (April 2003) law on conformity assessment and accreditation to comply with international requirements and best practices. The relevant standards include (1) requirements of the World Trade Organization (WTO) agreements on technical barriers to trade (TBT); (2) sanitary and phytosanitary standards—the application of food safety and animal and plant health regulations—(SPS); (3) the European Union's new approach model for standards and technical regulations; and (4) and the global approach on conformity assessment. A new law on market surveillance is currently in the drafting stage. This new law lays the foundations for improving market surveillance and eliminating some of the overlapping functions of the different inspection agencies active in Moldova.

However, progress is very slow and does not seem to keep up with the pace of changes in global market architectures. The pace has been particularly sluggish in implementing new laws. The main bottlenecks have been the complex and fragmented structure, and the lack of resources where they are most needed.

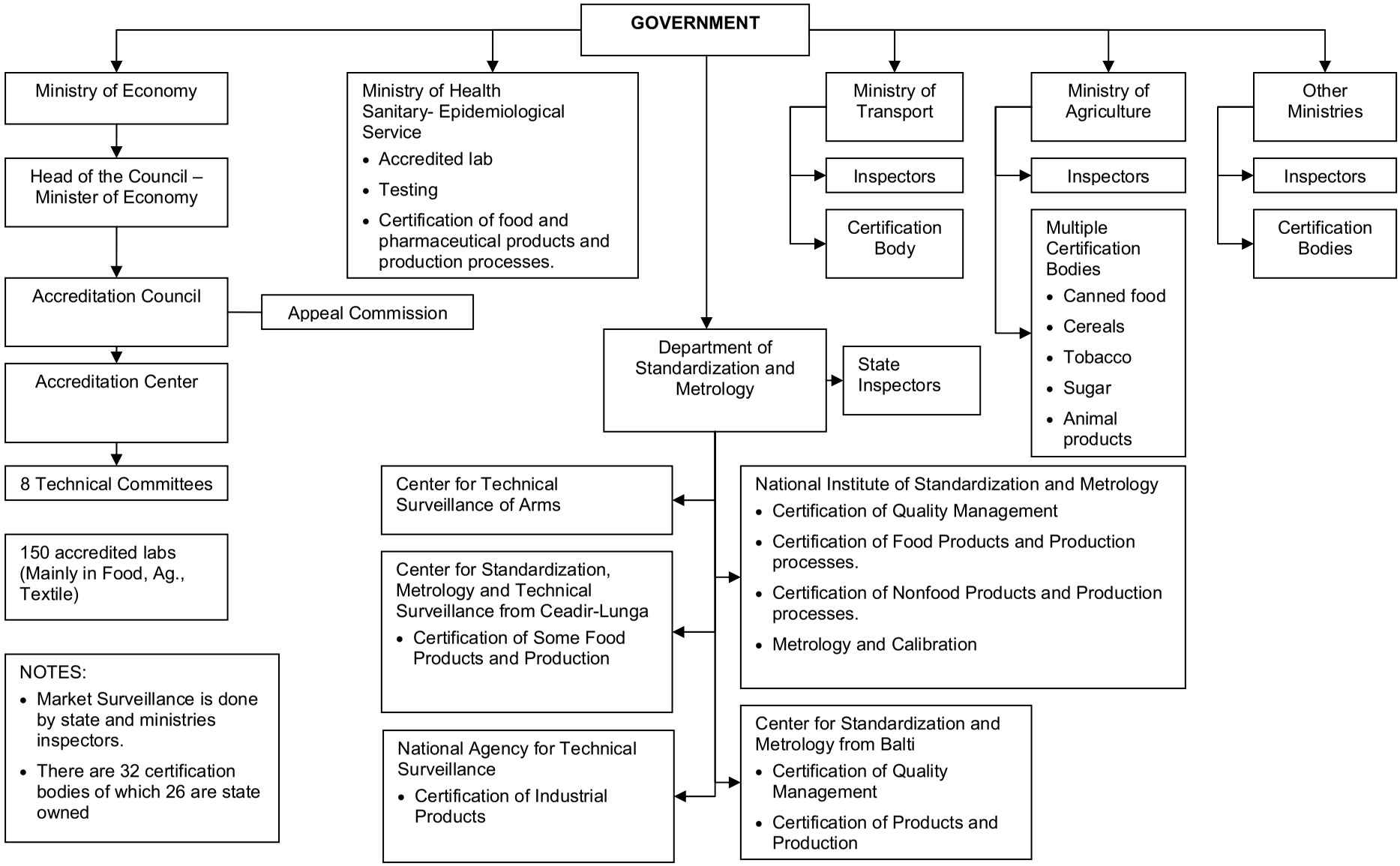
### *Structure*

The organizational chart on the next page presents a simplified layout of the quality infrastructure institutions of Moldova.

The chart does not show all of the ministries that have their own certification bodies and inspectors. There are seven such ministries, including the ones shown in the chart. In most cases the certification bodies under these ministries are registered as state enterprises. Many of the certification bodies also own the required testing labs. According to the Law on Standardization,[3] the various ministries are required to develop standards in their own area of expertise. Furthermore the Law on Conformity Assessment,[4] together with government decision 702, authorizes and defines the responsibility of each ministry in adopting technical regulations.

[3] Law on Standardization No. 590 of 22.09.1995 was amended by Law No. 919-XIV, 12.04.2000.
[4] Law on Conformity Assessment No. 186-XV, 24.04.2003.

# MOLDOVAN QUALITY INFRASTRUCTURE



The Department of Standardization and Metrology (DSM) is the only body authorized to adopt standards and represent Moldova in international quality forums. However, in practice, ministries, other governmental departments, and other economic entities draft the standards for adoption. The Department also holds the national reference standards used in legal metrology, and sets rules and policies for the operation of certification bodies and testing labs. As many as 80 state inspectors report to the Department. Their market surveillance role includes continuous and periodical inspection of production processes at all companies in Moldova, regardless of whether or not the company has the proper certification. Finally, five state certification and testing enterprises report to the Department.

Three of the five enterprises—the National Institute of Standardization and Metrology (NISM), the Northern Center for Standardization and Metrology in Balti, and the Southern Center for Standardization and Metrology in Ceadir-Lunga—provide testing, calibration, and certification services to enterprises. They also sell standards. The certification services differ, as shown in the chart.

In January of 2004, in line with the Law on Conformity Assessment, the accreditation function, which was separated from the Department of Standardization and Metrology, was established as an independent body. This body reports to an accreditation council made up of representatives of seven ministries, the DSM, conformity assessment bodies, labs, manufacturers associations, and educational and scientific institutions, with the Minister of Economy as head of the council. The DSM is the only agency that is authorized to select notified bodies of conformity assessment, with the condition that such bodies are accredited by the Accreditation Center.

## Standards and Standardization

Over the years, Moldova adopted more than 18,000 GOST standards[5.] In principle, all of them are mandatory; in practice, however, fewer than 5,000 of them are used or enforced. Common adherence to these standards supports trade of goods among all CIS countries. Looking west, though, the DSM has adopted only some 200 international standards as Moldovan standards in the past six or seven years. Most of these international standards were adopted from Romanian standards that, in turn, were based on international standards. Standards in developed countries are voluntary, but may be used as a means of conforming to technical regulations.

The expectation in 1999 was that by 2002 Moldova would have adopted enough international standards and that their technical regulations would be based entirely on voluntary standards according to the new approach model. In its Law on Standardization, the government later set a deadline of January 2005 for eliminating mandatory standards and establishing technical regulations based on voluntary internationally harmonized standards.

At this pace of standardization and adoption of technical regulations, it is unlikely that the government will be able to meet this commitment. The slow pace can be attributed to the lack

[5] GOST standards are originally Soviet standards that are still common to all CIS countries.

of resources at DSM and the fragmentation of responsibilities for standardization. For a country the size of Moldova, distributing the standardization function over so many departments and institutions impairs the effectiveness of the system.

The government should consider reassigning the responsibility of developing, adapting, adopting, changing, and eliminating standards to the Department of Standardization and Metrology. Furthermore, more resources should be allocated to the Department to hire staff capable of managing the work of technical committees. Staff should be fluent in at least one international language, such as English or French. Resources are also needed to allow the Department to participate in international standardization forums such as the International Organization for Standardization (ISO)[6], and the International Electrotechnical Commission (IEC).

In most countries, the national standardization body provides testing and certification services, and sells standards. This revenue stream is applied against standardization expenses and overhead of the institution. Also, in most cases the government contributes to the institutional budget to cover costs of standardization for the purpose of developing technical regulations and for the body to act as the WTO inquiry point for technical regulations and standards.

## Metrology

DSM is a member of the International Organization of Legal Metrology (OIML). The Moldovan metrology infrastructure can be described as follows:

### *Scientific or primary metrology*

Moldova does not have any primary national standards of measurements.

### *Industrial metrology*

Some secondary level standards are available to the Department of Standardization and Metrology. These standards are verified and compared with the Romanian National Standards. These standards are used in calibrating and verifying the standards in calibration labs and with legal metrology inspectors. Calibration of equipment by the Moldovan labs is not disputed by other CIS countries. Furthermore, local companies claim there has been no need to send any equipment for calibration abroad, even when locally produced products are shipped to the European Union (EU) and the U.S. However in most cases the more regulated products that are shipped to the EU and the U.S are semifinished products that require further processing in the importing country. Also the local industries are, for the most part, basic industries using equipment that does not require a high degree of precision.

### *Legal metrology*

Legal metrology is carried out by state inspectors that report to the Department of Standardization and Metrology.

[6] The DSM is a correspondent member of ISO.

The cost of establishing a national metrology infrastructure is high and should be carefully considered. A more in-depth study is needed to assess the current and future metrology needs of Moldova at all levels, starting with industrial metrology examining the needs of strategic industrial sectors and moving on to primary and legal metrology. New metrology facilities and equipment should allow for future expansion and development to address the growing needs of science and industry.

## Conformity Assessment

Moldova has 32 certification bodies; 26 are state-owned and about150 are product testing labs. Seven ministries have their own certification bodies and in some cases their own test labs. With this structure, it is very easy for the ministries to fall into the trap of overregulating the industries, since that creates extra sources of revenue. Interviewed firms[7] thought it was normal to be inspected by four different agencies or bodies and be certified by two different ones, and in many cases on the same criteria and GOST standards. The lack of clarity in the authorities of the different agencies, and overlapping responsibilities as set by different laws, add to the cost of doing business, without delivering the benefits that an effective quality assurance system would bring exporters.

For the most part, the labs are focused on the food, agrobusiness, and textiles industries. Since at the moment all standards are mandatory, certification is mandatory and self-declaration is not an acceptable practice.

Products tested and certified locally may affix the Moldova Standard (MS) mark on their product and packages. This conformity mark allows free marketing of the product locally, and in most cases is recognized by all CIS countries. For the few cases where Russia does require further testing or its own certification, primarily for some food products, a number of test labs and certification bodies in Chisinau are recognized by Russia for those specific products and can perform the conformity assessment. Once conformity is verified, the producer may affix the Russian conformity mark (PCT) on the product and place the product on the Russian market.

The MS mark is not recognized anywhere else in the world. One of the problems is the lack of internationally harmonized standards for products. The other problem is the lack of resources at the Department of Standardization and Metrology. The Department's inability to participate in world forums of quality and certification is an impediment to opening channels of communication for negotiating mutual recognition agreements, either bilaterally or multilaterally. Obviously a prerequisite to signing Mutual Recognition Agreements (MRAs) with developed countries is compliance of the quality infrastructure system in Moldova with international standards of operations. Testing and calibration laboratories should apply ISO/IEC 17025, inspection bodies should apply ISO/IEC 17020, and QS Certification/Registration bodies should apply ISO/IEC Guide 62.

[7] See Appendix A.

The government should consider consolidating state-owned certification bodies, where possible in some form under the DSM umbrella. This step would conserve resources and minimize the chances of overregulating industries. It would also funnel needed resources to DSM to participate in international certification and accreditation forums such as the international certification network IQNET and others. DSM participation in such forums is critical for the mutual recognition of certificates with target markets which would greatly facilitate trade and FDI.

## Accreditation

According to the Law on Conformity Assessment, the Moldovan Accreditation Center is authorized to accredit testing and calibration labs, product certification bodies, services certification bodies, personnel of certification bodies, quality and environmental management systems certification bodies, and inspection bodies. The Center was established in January of 2004, and is currently focused on accrediting labs, inspection bodies, and certification bodies only.

The Accreditation Center applies EN45010 in its own operation, and to this date has accredited 11 labs to ISO 17025, two inspection bodies to EN 45013, and several certification bodies to EN45011.

Some in the private sector are still skeptical about the impartiality of the accreditation department, and see the Center as still being part of DSM. However it is too early to pass judgment on this issue. In any case, these concrete steps taken to lay down the law, establish the Center, and apply international and EU standards in its operation constitute a step in the right direction. The Center is a member of the International Laboratory Accreditation Center (ILAC).

The government should press on with these reforms, further support the Center to hire staff needed and provide resources for subcontracting experts that can execute accreditation plans.

## Market Surveillance

One of the most successful market surveillance models worldwide is the one established in the United Kingdom (UK). The Health and Safety Executive (HSE) is the body responsible for market surveillance in the UK. HSE has established 202 offices, trading standards departments, in localities throughout the UK. They rely on internal specialists to survey the market for products based on the inherent risk and established accident and health data. This regime results in significantly lower fatalities and injuries from defective products than in most developed countries of the world including the U.S. and the remainder of the EU.[8] The HSE is just one example that shows that a single body responsible for market surveillance

[8] Yvonne Halpaus, Partner, QNET LLC, Elk River, Minnesota. Website: http://www.ce-mark.com and http://CEpartner4U.nl for the Authorized Representative office in The Netherlands.

can achieve the objectives and outperform other models in which multiple agencies are responsible for market surveillance.

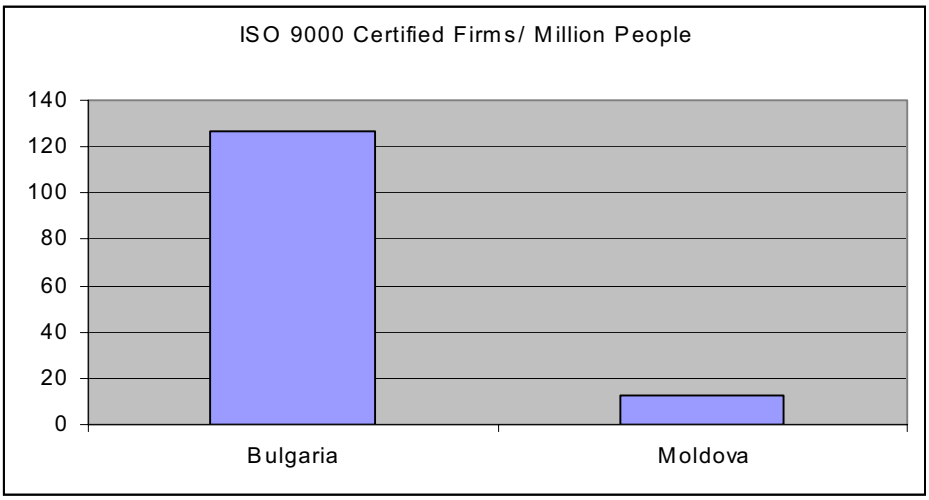
In Moldova, state inspectors that report to DSM and ministry inspectors carry out market surveillance based on mandatory standards as outlined in Article 17 of the Law on Standardization. One key difference between market surveillance in Moldova and that in the EU is that Moldovan inspectors not only examine products in the market or at borders, but also carry out inspections of production processes and products of local companies on a virtually continuous basis. Obviously, this degree of scrutiny is not warranted, since all companies are required to obtain product certification, and certification bodies inspect their facilities. Furthermore, frequent inspections create opportunities for corruption, undermining the system's integrity and effectiveness.

Article 27 of the Law on Conformity Assessment lays the groundwork for proper market surveillance; however, another law or implementing regulations are needed to work out the details for this activity.

The government should consider consolidating the market surveillance agencies or departments into one or two agencies and limit their authority to inspection of products in the market and points of entry, except where suspicion of noncompliance is established on the basis of objective information.

## Benchmarking

The ISO 9000 standard is the most widely known standard in the world. About 650,000 organizations/companies are certified to the standard. The following chart compares the number of firms that are ISO 9000 certified in both Moldova and Bulgaria per one million people of population.[9]




[9] Population estimates were taken from the CIA Fact Book (July 2003 estimates); the number of certified firms in Moldova was taken from the TUV company website site iso.md, and the number of certified firms in Bulgaria was taken from the Bulgarian club 9000 website www.club9000.org.

The difference, by nearly a factor of 10, illustrates that general quality awareness in Moldova is lacking. Given the cost of this lack of awareness to the economy, there is an urgent need to invest in awareness programs regarding standards and quality and the economic benefits of applying international standards.

## Summary of Main Findings and Recommendations

Moldovan quality assurance infrastructure is fragmented and requires consolidation if it is to keep up with the pace of changes in market architectures. It will be difficult for Moldova to implement the new approach on technical regulations and standards under the current structure. This threatens Moldovan compliance with TBT requirements.

What is needed now is a systematic review of all laws related to quality infrastructure, including the Law on Conformity Assessment, the Law on Standardization, the Law on TBT, the Law on Consumer Protection, the draft Law on Market Surveillance, and others related to SPS. The objective of such a review would be to eliminate overlap of responsibilities and integrate authorities in this arena in a way that serves the future strategic needs of Moldova.

External assistance is required to support the current legal and organizational reform efforts and to accelerate the pace of implementation; the TACIS technical assistance project (Technical Assistance for the Commonwealth of Independent States) is an appropriate response to this need. The separation of the accreditation function from the Department of Standardization and Metrology is a step in the right direction, and should be further supported by the government and interested donor agencies.

Participation in international quality forums such ISO, IEC, OIML, ILAC, IAF, and others is critical for Moldova to build its credibility in this arena and for its ability to participate in multilateral mutual recognition agreements. However, such an investment is recommended only after the current structure has been reformed and consolidated.

Finally, efforts to build an effective quality assurance infrastructure without a market are of little value. External assistance is needed in spreading awareness on quality issues and the benefits of compliance with international standards. Such programs could be launched with the assistance of business associations and the Moldovan Export Promotion Agency (MEPO). Trade fairs organized by MEPO or donor agencies to target markets should also study the market entry requirements and help participants develop access to services, locally and abroad, for compliance. That approach would create a critical mass of certified companies that will thereafter drive policy changes in the area of quality infrastructure.

## Team Visits during May 17 – May 24

| May 17 | |
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| Sergiu Baban<br>General Director<br>Department of Standardization and Metrology<br>Tel: +373 22 75 85 88 | Nona Luskalova<br>Deputy Director General<br>Department of Standardization and Metrology<br>Tel: +373 22 75 09 74<br>nluscalova@standart.mldnet.com |
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| **May 18** | |
| Grigorii Ozmitel<br>Director<br>“Electromasina” JSC<br>77, Petru Rares<br>Chisinau, Republic of Moldova<br>Tel: +373 22 22 05 28 | Eugen Bahmutov<br>Technical Director<br>“Electromasina” JSC<br>77, Petru Rares<br>Chisinau, Republic of Moldova<br>Tel: +373 22 22 88 18 |
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| **May 19** | |
| Valentin Uncu<br>Production Director<br>“Orhei-Vit” JSC<br>20, Stejarilor str.<br>Orhei, Republic of Moldova<br>+373 35 21567 | Elena Cumpana<br>Quality Manager<br>“Orhei-Vit” JSC<br>20, Stejarilor str.<br>Orhei, Republic of Moldova<br>Mobile: +373 7 9415052 |

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|---|---|
| Vasile Podureac<br>Commercial Director<br>"Moldagrotehnica" JSC<br>No. 4, Industriala str.<br>Balti, Republic of Moldova<br>Tel: +373 231 43749<br>www.moldagrotehnica.md<br><br>Oxana Petrovici<br>Chief of Marketing Department<br>"Alfa-Nistru" JSC<br>131, Stefan cel Mare str.<br>Soroca, Republic of Moldova<br>Tel: +373 30 22072 | Anatolie Cheptanaru<br>Head of Quality Assurance Center, Director of 20 keys<br>"Moldagrotehnica" JSC<br>No. 4, Industriala str.<br>Balti, Republic of Moldova<br>Tel: +373 231 43749<br>www.moldagrotehnica.md |
| **May 21** | |
| Tatiana Petrova<br>General Director<br>"Eurofarmaco" JSC<br>No. 2, Vadul lui Voda str.<br>Chisinau, Republic of Moldova<br>Tel: +373 22 44 99 69<br>Liliana Munteanu<br>Moldovan Export Promotion Organization<br>65, A. Mateevici str.<br>Chisinau, Republic of Moldova<br>Tel: +373 22 24 50 51 | Veaceslav Sterbet<br>Executive Director<br>Moldovan Export Promotion Organization<br>65, A. Mateevici str.<br>Chisinau, Republic of Moldova<br>Tel: +373 22 27 36 54<br>Eugenia Spoiala<br>Director<br>Accreditation Center in the Field of Product Conformity Assessment<br>Office 1200<br>180, Stefan cel Mare<br>Chisinau, Republic of Moldova |
| **May 24** | |
| Vasile Onu,<br>Team Leader<br>Support to Harmonization of Moldova System of Standardization<br>TACIS<br>Tel: +373 22 20 34 69 | |

# MOLDOVA'S QUALITY ASSURANCE INFRASTRUCTURE
# ANNEX A: KEY TERMS

## Standard

A standard, as defined by ISO, is a document established by consensus and approved by a recognized body that provides for common and repeated use, rules, guidelines, or characteristics for activities or their results, aimed at achieving the optimum degree of order. International standards exist for products, services, quality and environmental management systems, measurements, conformity assessment, training, information, and other fields.

Perhaps the most widely known standard in the world is the quality management standard ISO 9000. Over half a million companies worldwide apply the standard. Any type of organization may apply the standard. Compliance with the standard requires setting operational checks and balances at all levels to ensure that the employed processes consistently meet applicable regulatory requirements and customer's quality requirements and seeks to improve quality and performance all the time.

## Metrology

Metrology is the science of measurement. There are three main types of metrology:

**Scientific or primary metrology** consists of maintaining the primary national standards of measurement and supporting the highest level of scientific measurement in the country.

All developed countries and many developing countries have their own national standards. These standards are important to ensure that measurements taken around the world are comparable and are of the required degree of precision. For example, how would we know that a kilogram in France is the same as a kilogram in the U.S. or a measurement of one amp of electricity is the same everywhere? These standards, that have a very high degree of precision, are used in a country to indirectly calibrate almost every instrument used in measurement and then used in comparisons with other countries.

**Industrial metrology** addresses the calibration needs of industries using secondary or working standards to calibrate and verify the reference standards of calibration labs. These labs, in turn, provide calibration and verification services to the industry using their working standards.

**Legal metrology** is the policing activity of ensuring that all measurements used in trade are accurate, to ensure trade equity.

When you fill your car with 20 liters of gas, are you getting exactly 20 liters, or less? Legal metrology inspectors ensure that you are getting what you paid for.

## Conformity Assessment

ISO defines conformity assessment as an activity concerned with determining, directly or indirectly, that relevant requirements are fulfilled. Conformity assessment is performed for regulated and nonregulated products and services to verify conformance to a standard. This may involve assessment of the design process, the production process, the final product, the quality and environmental management systems, and personnel, in some cases. The requirements for conformance are described in the standard.

Here is an example of conformity assessment of a regulated product. For an X-ray machine to be placed on the market in Europe, it has to comply with EN60601, a European standard on electrical medical device safety. The machine goes through many tests to ensure that it meets both performance and safety requirements. In fact the conformity assessment of such a product with the applicable standards also involves a review of the design and production process, to ensure that adequate safety precautions were built into the product and that the production process will consistently produce a product of the same level of quality and specifications.

There are three types of conformity assessment:

**Self-declaration** by the producer or service provider: This is a risky approach unless the provider is well recognized for its quality.

**Buyer inspection and verification** (referred to as second party assessment): This method is expensive, as it requires inspection and verification by each buyer.

**Third party certification**: This method is the most preferred one and works quite well if the conformity assessment body is recognized both locally and internationally.

## Accreditation

Confidence in the competence and the impartiality of the conformity assessment body is key to the acceptance of the certificates, both locally and internationally. National accreditation bodies inspect the conformance of conformity assessment bodies to standards of operation to ensure their competence and impartiality. International standards exist for product certifiers, inspection bodies, testing labs, quality and environmental management systems, and personnel involved in conformity assessment.

### Market Surveillance

Advanced economies that allow self-declarations of conformity by the producer require a tool to ensure that their markets are free from products that do not comply with the essential safety requirements. Furthermore, market surveillance ensures fair competition by eliminating products from the market that attempt to undercut prices by bypassing these

essential requirements. Specialized market surveillance authorities and customs typically carry out market surveillance.

Inspectors of market surveillance would randomly purchase products from the market, for example from a grocery store, and carry out a set of tests against the requirements in a technical regulation for this particular product. Milk products, for instance, should pass certain microbiological and chemical tests to verify its quality and ensure it is safe for consumption. If the product is found to be noncompliant, an investigation is launched that could involve the police and other authorities, depending on the threat level.

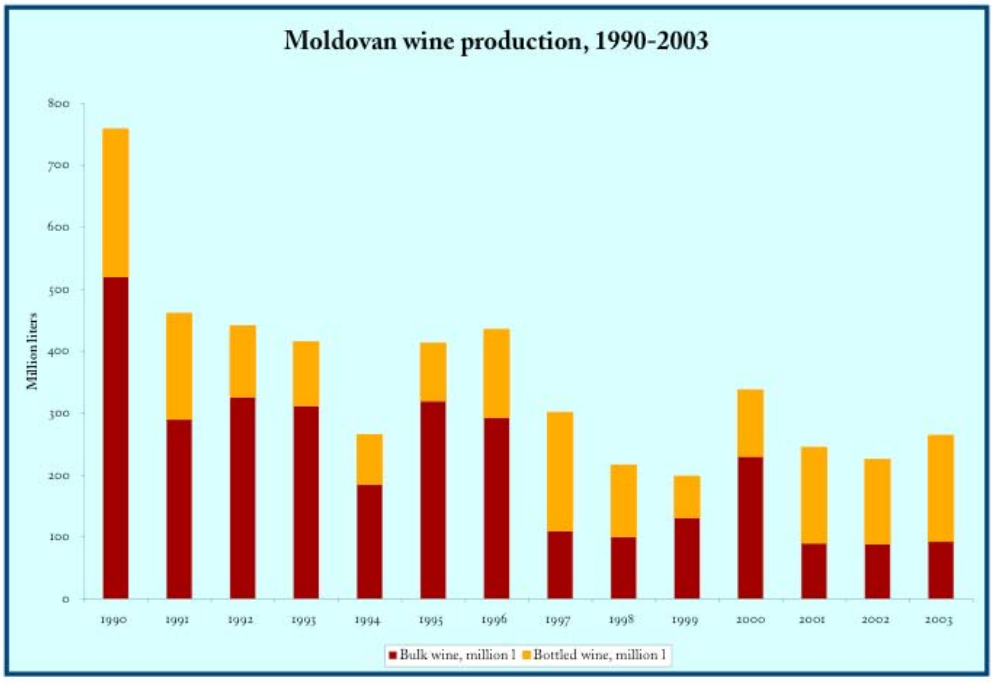
# THE WINE CLUSTER

## Introduction

Wine and related (distilled) products represent Moldova's second most important foreign exchange earner, after workers' remittances. It accounts for roughly one-fourth of total (gross) merchandise exports, and for an even greater percentage in value-added terms. The share of this sector in industrial employment is roughly 25 percent, and possibly even higher if the cluster as a whole (including bottles, labels, laboratories, and the like) is considered. Semidry and semisweet wines account for 75 percent of total production, dry table wines for 10 percent, sparkling wines for another 10 percent, and fortified wines for 5 percent. Some 93 percent of total production is exported. In 2003, total revenues from wine exports amounted to US$195 million, plus US$36 million for distilled products (mostly brandy). Russia is the principal market, accounting for over 80 percent of exports.

As other agriculture, total wine production has declined sharply from the levels in the mid-1980s, as illustrated in Figure 5. Gorbachev's anti-alcohol policy, the fragmentation of land holdings during land reform following independence, and the removal of subsidies on agricultural inputs combined to reduce total vineyard acreage by over 40 percent since the mid-1980s. Total production has stabilized somewhat in recent years, even showing a slight upward trend. The proportion of wine bottled has more than doubled from the early (and late—following the Russian ruble crisis) 1990s, reaching an average of 63 percent over the last three years.

**Figure 5: Wine production trends**



## Cluster Composition

Moldova's wine industry is made up of some 126 primary production wineries that process grapes into raw wine, 6 secondary production wineries that bottle wine, 18 mixed wineries that do both, 7 brandy factories, 9 sparkling wine producers, and 3 units producing fortified wines. All but 11 of the wineries have been privatized, and all vineyards are privately owned. An estimated 70,000 individuals, mostly smallholder farmers, are involved in the cultivation of grapes, and another 15,000 workers are engaged in processing and allied industries.

**Figure 6: Production trends for sparkling wines and spirits**

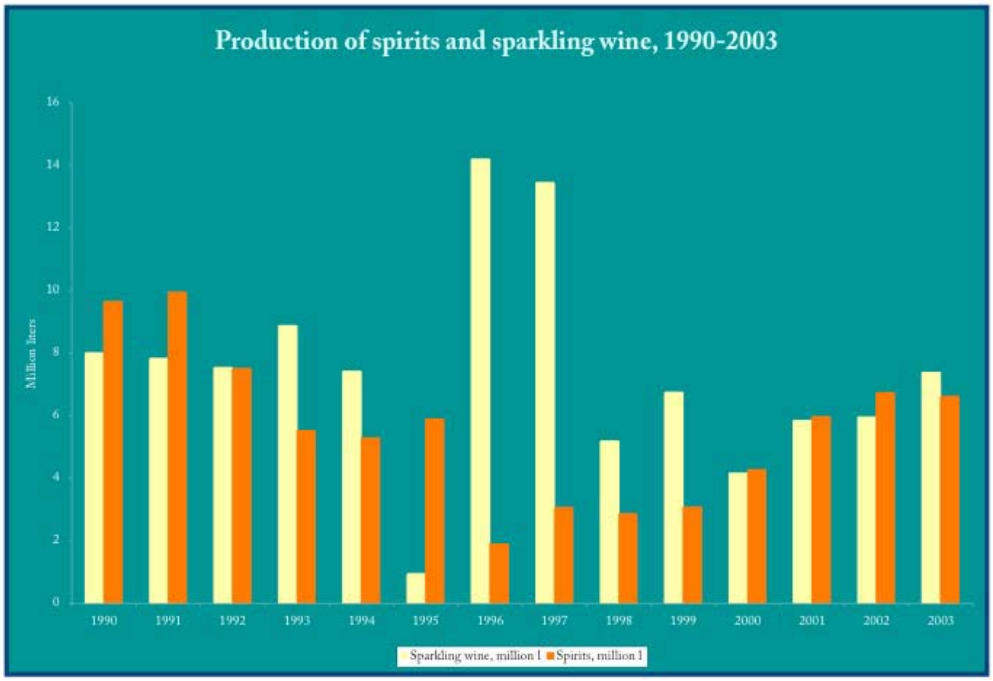
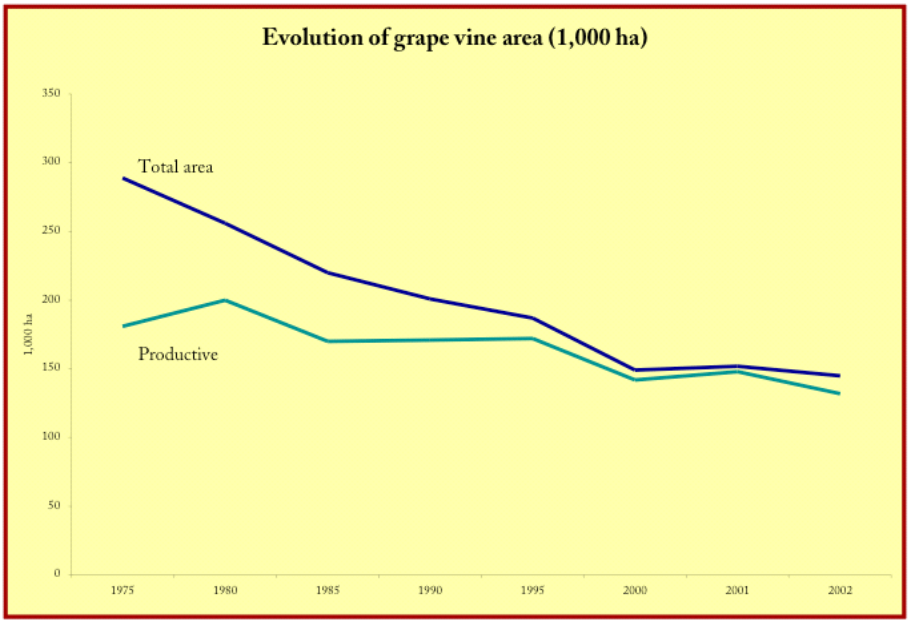


**Figure 7: Total vineyard area, 1975-2002**




As of 2002, the total vineyard area was about 145,000 hectares (ha), of which 132,000 ha were in production. As Figure 7 illustrates, the situation has stabilized in the last few years, as some replanting is taking place. Reportedly, since the beginning of 2004, some 2,500 ha of new vineyards have been planted, including 350 of vine seedlings, mostly by new companies. The State Development Program for Rehabilitation of Vineyards aims to achieve about 100,000 ha of new plantings by 2020. However, approximately 8,000 ha are uprooted each year, because of their age and declining productivity. Thus, even optimistic projections see little, if any, expansion of the current vineyard surface area.

## Productivity and Management

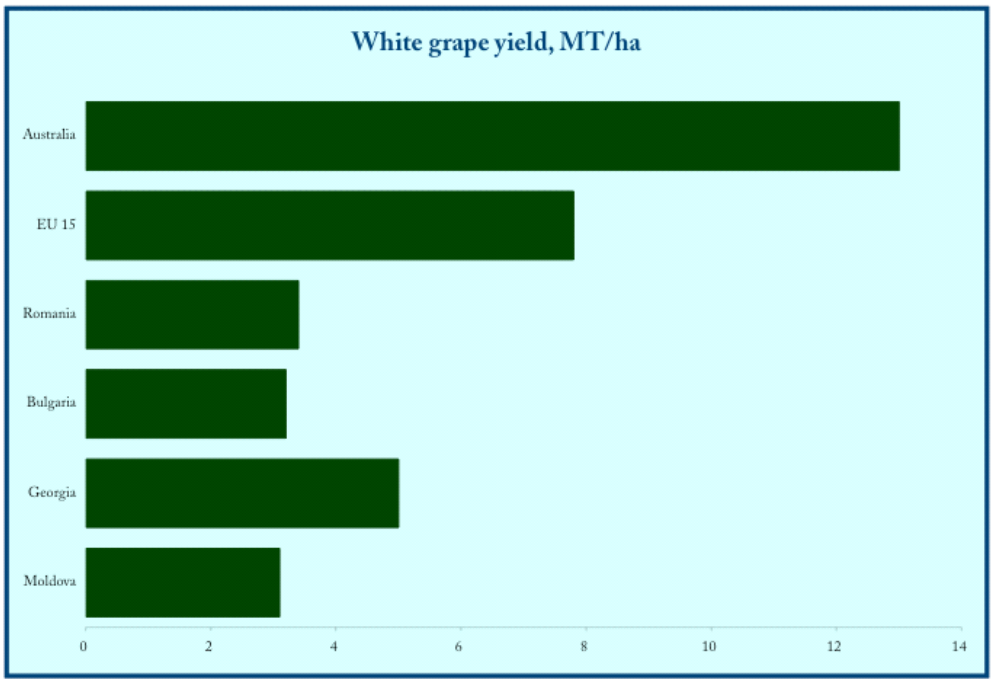
### *The Vineyards*

As the vineyard acreage declined since the mid-1980s, so did average yield. The comparison in Figure 8, as of 2001, shows that yields in Moldova are at the low end, about the same as in Romania and Bulgaria, but substantially less than Georgia—and far behind those for the EU, let alone Australia. The low yield of Moldovan vineyards is primarily the result of their age and the low rates of application of pesticides, fertilizer, and water, which are too expensive for most growers. Farmers who found themselves owners of small tracts of vineyards through the privatization process have limited technical skills. Vineyards were fragmented into parcels too small to be worked efficiently. Mechanization became cost ineffective for the average landholding. Consequently, grape growing became, at best, marginally profitable.

However, some consolidation of vineyards has taken place since, partly as a result of the substantial out-migration of the rural population, through some owners buying out their

neighbors, or through long-term leasing arrangements. The consolidated vineyards often transform themselves into firms, *agriferme,* that are able to obtain financing for inputs and, in some cases, technical assistance from privatized wineries, especially those with foreign ownership.

**Figure 8: Vineyard yields**




Yield is roughly inversely proportional to quality. Old vines, which have to struggle to survive, tend to produce the best grapes, which have the potential to make the best wine, provided they are protected from disease. Ideally, maximizing returns calls for an optimum compromise between yield and quality. Moldovan vineyards are certainly below this optimum, towards the low-yield side.

Better use of pesticides, based on a sound understanding of vine metabolism and pesticide mechanisms, could raise both quality and yield. The efficacy of pesticide application could be enhanced by ecological methods of pest control. More generally, advanced ecological viticultural techniques can be effective, and perhaps more cost effective, given low manual labor costs.

## Wineries

The structure of Moldova's wine-making sector is undergoing change. There appears to be a trend toward a dominant market position by a few large firms. Large distribution companies, many of them with Russian capital, have been estimated to control about 80 percent of the wine production. Privately-owned distributors, such as *Acorex*, and *Vinorum*, originally wine traders focused on the Russian market, have purchased selected wineries in the central and southern regions of the country in the context of the sector's privatization. These groups are

beginning to play an increasingly influential role in the transformation of the wine industry. Especially wineries with foreign partners have placed immediate emphasis on upgrading winery processing equipment, which can have an immediate effect on quality. Several of the wineries are working with the a*griferme* in vineyard planting programs.

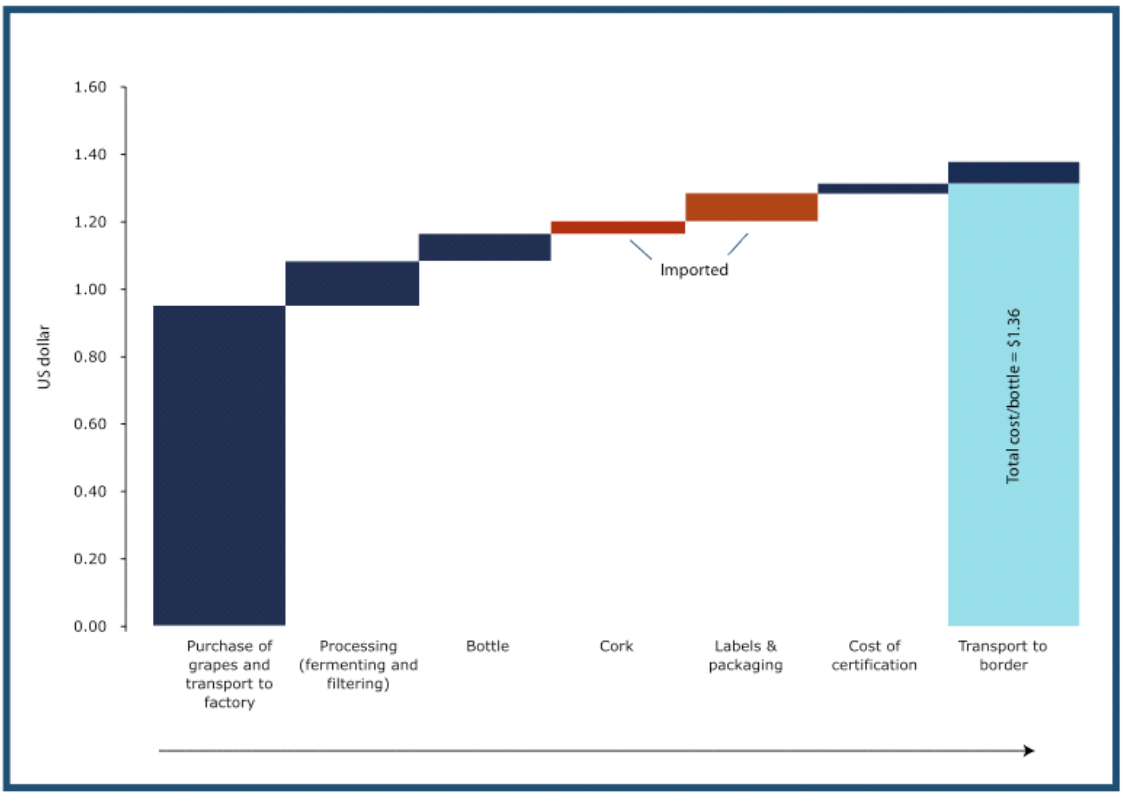
The wines from most of the newer wine companies are generally of a higher quality, well made and clean, although most, particularly the whites, exhibit rather subdued bouquets. Both reds and whites usually have lighter palates than wines preferred in premium markets. The newer wine companies tend to have newer equipment and storage facilities, designed with the exigencies of modern winemaking techniques in mind, whereas the state-owned and former state-owned wineries work with equipment often more than 30 years old, and equipment upgrades have usually been piecemeal.

However, it is clear that part of the difference stems from mentality: the new entrants are usually receptive to new ideas and to the need to change styles. On the other hand, the older wineries, even though they may now be privatized, usually retain the same personnel at the middle management level. Accordingly, the same bad habits persist, and there is a preference for the classical Eastern European wine styles over the wine styles preferred in premium markets.

As equipment in the privatized wineries is upgraded, attention will shift increasingly to improvements in grape production. What transformation in the industry has occurred so far has already resulted in an excess demand for quality grapes. The focus on grape production reflects in part the cost structure of winemaking in Moldova, using a low- to medium-quality bottled red wine as a representative product. As part of the recent World Bank-sponsored Trade Diagnostic Study, the wine sector case study produced estimated costs for the different stages in the production and distribution of wine, shown in Figure 9. These estimates do not include taxes and depreciation of buildings and equipment. The cost of grapes to the factory gate accounts for 70 percent of the total cost, which is comparable to that in competitor countries, while it is reportedly in the range of 50-55 percent for Germany, with significantly higher labor cost.

Improving the competitiveness of Moldova's wine cluster calls for cooperation and leadership. While individual entrepreneurial action can address some of the issues, others go beyond the domain of individual participants. The recognition that Moldova is in trouble in its major market has stimulated debate and may provide the incentives for exploring joint action.

**Figure 9: Cost structure for a low/medium quality bottle of red wine**




Source: Wine sub-sector case study, Trade Diagnostic Study (World Bank), 2003

## Demand and Market Architectures

### *Losing Ground in the Key Market*

Over the past five years, over 80 percent of Moldova's still bottled wine exports and over 75 percent of bulk wine exports went to Russia. Ukraine, the second largest market, is far behind, and subject to the imposition of nontariff barriers, such as the recent retaliation for Moldova's decision to remove Ukrainian ethylic alcohol from the Moldova-Ukraine free-trade agreement. The EU does not represent a significant market, with 2003 exports equivalent to little over 1 percent of the total, reflecting the poor quality of wines from Moldova, and the limited exposure of Moldova's wine producers and exporters to the European market architecture. Moreover, Moldovan wine exports to the EU are subject to excise taxes that translate into significant ad valorem taxes for lower-priced wines, adding as much as 10 percent to the average cost.

In the Russian market, Moldovan wines, mostly of the semidry varieties, have historically competed in the low- and medium-price segments. Moldova exporters have in fact dominated the Russian market, but they have been losing market share since 1998, as illustrated in Figure 10. The trends in market share over the period 1998-2003 are a result of the sharp

drop in wine imports (by 57 percent) in 1999 in the wake of the Russian financial crisis and of changing tastes since. The abrupt decline also brought some distinct changes in market shares. Moldova's market share declined slightly between 1998 and 1999 (from 57.4 to 55.9 percent), while the shares for French and Georgian wines rose, from 8.4 to 15.3 percent, and from 6.2 to 9.9 percent, respectively.

**Figure 10: Trends in Russian wine imports**

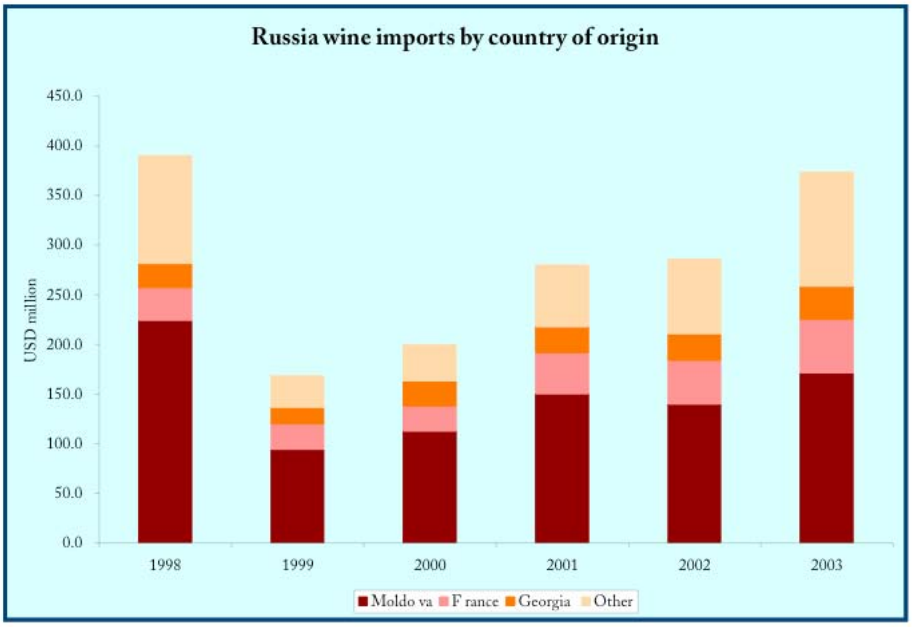



**Figure 11: Market shares for Moldova's competitors**

By 2003, Russian wine imports had recovered almost to 1998 levels, but the expansion of the market has been accompanied by significant structural shifts. Over the last three years, 2001-2003, Moldovan wines have lost almost 8 percent of the market; their market share dropped from 53.5 to 45.7 percent. The countries that gained at Moldova's expense include Bulgaria, Argentina, Chile, and Italy, as illustrated in Figure 11. A major reason for these shifts is the evolving market architecture, together with changing preferences. At the same time, the capacity constraints in Moldova's wine sector have also played a role.

One indication that capacity constraints affect Moldova's wine exports to Russia is the rising level of wine imports from Romania to Moldova; according to Romanian customs data, wine exports to Moldova rose from 1.4 million liters in 2000, to 16.3 million liters by 2003 (2001: 5.0 million liters; 2002: 21.9 million liters). In other words, over the last two years imports from Romania were close to 10 percent of wine exports to Russia in volume terms. While there are other factors at work, especially the preferential (duty-free) access of Moldovan wines to the Russian market, this pattern does suggest a need to source wine from Romania, since domestic production appears inadequate to keep pace with the surging Russian market.

### *Raising Quality and Consistency, Moving to a "New World" Style*

Yet the fundamental challenge lies in changing consumer preferences and market architecture for wine (and spirits) in Russia. Overall, tastes for types of wine are changing slowly. The most important categories are still semisweet and semidry wines, with an alcohol percentage of 9 percent, although interest in dry wines is growing. Red wine accounts for 71 percent of sales in Moscow and 64 percent in other regions of the country. All signs point to the notion that the Russian wine market, at least in the urban centers, is converging with markets in Western Europe and the U.S. As incomes are rising and exposure to different types of wine is increasing, Russian consumers increasingly have the same expectations regarding wine quality and wine style. In effect, wine in Russia is currently undergoing the transition from a commodity to a fashion item. Moldovan wines tend to be associated with the old style, and are effectively shunned by the fastest growing segments of the Russian wine market, consumers who are becoming more sophisticated in their wine preferences. (See Annex A for a discussion of qualitative aspects and trends in the Russian wine market.)

Moldovan exporters understand the need to move up the quality chain to recapture market share, or at least arrest the decline. Increased competition in their traditional, low-price (US$1.80–2.20/bottle) market segment—for example from Argentina, whose exporters took advantage of the devaluation of the peso—have lowered margins. Many of the larger Moldovan exporters are therefore beginning to target the medium-price markets, US$3.00/bottle and upwards.

Maintaining or regaining market share in the low-price market segment, or expanding in the medium-price markets, will demand efforts to improve quality and consistency. Moldova's winemakers and exporters will need to move away from traditional wine styles toward "New World" styles. Moving to higher quality wines would also affect Moldova's position in the EU market, where consumers prefer dry wines with 12 percent alcohol, since a higher value

would lower the ad valorem implications of the flat rate duty imposed. (See Annex B for a more detailed look at the increasing importance of New World styles and the implications for winemaking in Moldova.)

### *Responding to Changing Market Architectures*

Moldova's wine exporters to the CIS tend to rely on market channels and rules that prevailed during the days of COMECON. Most of the Moldovan exporters have strong links to Russian trading firms that handle wine imports, wholesale, and distribution; overall, there are about 50 of these firms, importing nearly all of the wine consumed in Russia. In fact, Moldovan wine exporters established some of these trading houses themselves. These arrangements still work well to supply the traditional markets, but they are increasingly out of tune with the emerging market architecture responding to the needs and expectations in the growing market segments.

The trading firms in effect compete with other wholesalers, in an environment that has seen rapid consolidation. The number of wholesalers doing business on a regular (and legal) basis has been estimated to have shrunk from 2,500 establishments to about 250. Moreover, as in Europe, supermarket chains are playing an increasingly important role in the retail of wine. In the EU, these retail outlets work on margins of 15-25 percent, rather than the conventional 35-50 percent, putting increased pressure on prices (downward) and quality (upward). In Russia, competition for shelf space in supermarkets has grown to the point where fees are averaging $500 per month per store, leading some importers to open their own retail stores. In a changing market environment, the choice of the "right" distributor, one who is familiar with western-style market architectures that characterize the faster-growing market segments, becomes critical.

One indication of the changing architecture of Russia's wine market is the growing emphasis on marketing and promotion. Moldova's competitors, especially the purveyors of New World style wines, invest more in advertising and promotional events—efforts that pay off in terms of gaining market share. The traditional consumer of Moldovan wines may remain loyal without further promotion, but these consumers define a shrinking market segment. Active outreach and promotion are essential to defending and building the Moldovan wine brand in the growing, highly competitive market segments.

Such efforts demand joint action. While individual wine producers may succeed in positioning their brand, they are still competing as Moldovan producers with Chilean producers. An *appellation* approach may be appropriate, but in any case, a joint promotion of Moldovan wines is a suitable response to emerging market realities. Joint promotion of course also puts a premium on raising quality, and especially consistency. It also requires a more organized response to issues of counterfeiting bottles and labels and passing them as Moldovan branded products, rather than the current ad hoc approach by individual wine producers.

## The Complementors

### *Transport*

Generally, transport costs represent between 5 to 7 percent of the value of the consignment, a significant factor in price sensitive markets. Moldovan wine exports to Russia physically go through Ukraine, much of it through the rail network. Pilferage is a problem, although the quantities reportedly are less than 1 percent of the cargo. Since these losses are too small to be recovered through insurance claims, most firms rely on physical protection. To other CIS markets, in particular Belarus and Kazakhstan, as well as the transport of bulk and bottled wine to European markets, wine exporters rely more on trucks. Exporters have not encountered significant problems finding trucks that meet European standards for the latter; however, if wine exports to the EU, especially Germany, were to increase, the country's aging truck fleet may impose constraints and additional costs. Moldova's wine exporters do not view the poor quality of the road network within Moldova and around the region as a significant issue.

The position of Ukraine as the transit corridor for reaching Moldova's primary market entails risks and costs to Moldovan wine exporters, in spite of the free trade agreement between the two countries. Border crossings as such, although, time-consuming, do not appear to pose significant problems. But Ukrainian authorities may impose certain nontariff requirements that add to the cost of moving goods through Ukraine. For example, they recently introduced a requirement for specially heated railway wagons for transporting bulk wines through Ukraine during the winter months. This requirement may add as much as 1 percent to the total cost.

Similarly, Ukraine requires that exporters post transit bonds for the full value of the shipment for agricultural products to pass through Ukraine, to be returned after the consignment leaves the Ukrainian boarder. Ostensibly designed to stop smuggling along the border, the transit bond has become a tool to moderate trade with Russia. The cost of obtaining bank guarantees to cover the transit bond may add as much as 2 percent to the cost of the wine.

### *Quality and Standards Infrastructure*

The Moldovan wine cluster is a case study in the duality of the quality infrastructure discussed earlier. Moldovan wine producers and exporters are fully familiar with the GOST standards that apply to Russia and the CIS, in particular the mandatory Standards 117 and 118. Moldovan standards with respect to specific gravity, alcoholic strength, volatile acidity, residual sugars, and so on, follow these standards. They do not pose any technical problems or entail additional costs: as part of the licensing requirements in Moldova, all wineries need to have a laboratory. Many of the larger wineries, in particular those with Russian capital, are accredited by GOST to test for all parameters for the standards.

Russia recently introduced GOST R standards pertaining to wine.[10] Exporters that lack GOST R accreditation are liable to have their shipments tested at the border. The larger wineries do not appear to have significant problems in obtaining certification. While some of the smaller wineries consider the cost of compliance to be high, obtaining the certificate is relatively straightforward, and unlikely to add perceptibly to the unit cost of wine destined for the Russian market. The larger wineries facilitate the process by sponsoring visits of Russian inspectors, who can certify that their facilities comply with standards. Russian labeling requirements differ little from those in other markets, with the exception of a required expiration date, which is unusual for wine. However, labeling requirements apparently change frequently, with little notice to exporters. In 2002, for example, Moldovan exporters incurred costs for redesign and reprinting of labels to cope with changing requirements in at least two instances.

The European Union requires a VI 1 certificate from an accredited institution for its wine imports. There is one laboratory in Moldova accredited to issue VI 1 certificates. It is government controlled, supervised by the Department of Moldvin; this laboratory has at times (2002) had problems in meeting the annual recertification requirements. Laboratory charges are significant, especially in light of the export volumes to the EU. EU guidelines for wine labeling include restrictions on wording and terminology.

Moldovan wineries have had difficulty in meeting some of the EU standards, particularly in terms of *tolerance* thresholds, permissible deviations of the actual alcohol content from stated levels. A large part of the problem is the difficulty of ensuring uniform quality of inputs sourced from many smallholder suppliers.

### *Finance and Credit*

Efforts to transform the Moldovan wine industry, to upgrade grape production and modernize winemaking facilities to improve quality, are financially demanding. For example, the cost of planting and maintaining a vineyard during the four years until it bears fruit is estimated to fall in the region of US$10,000 per hectare. Similarly, the required investment in equipment to improve quality and ensure uniformity is high. Finally, the seasonal nature of production, as for all agribusiness, implies specific needs for working capital, which has been estimated at US$8-10 million for the larger wineries.

The underdeveloped state of the Moldovan banking system prevents it from playing the required role in smoothing the transformation of the Moldovan wine industry. No foreign banks are present in the country, and the local banking system is too fragmented, with most banks below optimal asset size. Moreover, banks are governed by a plethora of Central Bank restrictions on transactions. For example, regulations permit wineries to obtain U.S.-dollar denominated loans, at rates of 6-7 percent, only for imports, such corks, labels, or bottles. For other purposes, wineries (as other companies) are limited to Moldovan leu-denominated loans at nominal interest rates of 16-18 percent. Estimates put the additional cost per bottle exported from this particular regulation at 3 to 4 percent.

[10] GOST R 51159-98: General specifications for wine; GOST R 51165-98: Sparkling wines standards; GOST R 51875-2002: Standards relating to wine materials and cognacs.

The larger wineries are better capitalized, often with foreign (Russian) investment. Yet, as long as they are operated as independent profit centers, they too can face serious cash flow problems inherent in the nature of their operations. These problems are exacerbated by the short maturities of loans, which require frequent refinancing.

With respect to exports to Russia and the CIS, the export financing system is virtually nonexistent. Most Russian importers will pay for a wine shipment only after it arrives at the destination, and when part of it is sold. Letters of credit are not used. In effect, Moldovan exporters bear the full risk of nonpayment, mitigated by the long-standing relationships and cross-ownership pattern tying them into the Russian market. The risk of nonpayment is therefore reportedly low, around 5 percent. Even so, it represents a cost of doing business, since legal redress is uncertain, and debt collectors usually recover only 50-60 percent of the amount due in cases of nonpayment.

## Factor Conditions

Moldovan wine production is built on favorable climatic and soil conditions, with the main grape-growing regions in the center and southern regions, at about the same latitudes as the Bordeaux and Burgundy regions of France. European grape varieties account for 90 percent of the plantings, with Pinot Gris, Chardonnay, and Sauvignon the most common white wine varieties for about 70 percent of total cultivated area. Red varieties, accounting for the remaining 30 percent, include Cabernet Sauvignon, Merlot, and Pinot Noir.

A large portion of the planted vines has to be replaced. Replanting offers the opportunity to obtain better quality rootstock. Several local companies, both state-owned enterprises and recently established private operations, have begun to propagate vine seedlings. These initiatives include joint ventures with French firms, one of which is expected to yield about 500,000 vines per year. However, domestic producers of vine seedlings are somewhat disadvantaged by a lack of faith in their virus-free accreditation in comparison with imported seedlings. The lower price they offer is insufficient to offset these disadvantages. The cost of certified imported plant materials from Italy, France, or Germany is about Moldovan Leu (MDL) 16-19 (US$1.30-1.50), and for domestic seedlings, 13-15 MDL. Importers of vines need to obtain approval from the National Institute of Grapes and Wine, which is not an onerous requirement, but does take some time.

Under the Soviet system, the irrigation network had been developed on the basis of low energy costs, favoring high pressure lift. Both the manner in which land privatization was carried out, and the shift to world market pricing for energy, contributed to the effective collapse of the irrigation system, down to about 7 percent of its coverage in 1985. The degrading of the irrigation network has exposed grape producers to greater risk, since droughts or semidroughts are a fairly common occurrence—a 20-percent chance of a drought, and a 40-percent chance of a semidrought in any given year. The wine industry would therefore benefit from the development of an efficient irrigation network, which would need to be a drip system to be economical.

Finally, Moldova benefits from a strong human resource base in winemaking, although there is a need for modernizing curricula, focusing more on the business aspects, in addition to the technical issues. The apparent trend toward increased involvement of European winemakers in Moldova is likely to accelerate the transformation, and to impart new skills needed to compete effectively in today's global wine markets.

## Policy Aspects

### *Government Role*

The government continues to play a strong, interventionist role in Moldova's wine cluster, perhaps even more so than in other areas of the economy, given the "strategic importance" of the sector. There has been progress in the privatization of wineries, and in land reform, although a flawed approach has contributed to contraction of activity levels. The government has done little to facilitate the movement toward arrangements, like land swaps and other measures, to create larger, economically viable vineyards. Moreover, the government retains ownership of 11 of the larger wineries, most notably the *Onoteca* winery of Cricova.

As an expression of the government's proactive stance toward the development of the wine cluster, it created the Moldvin Agricultural and Industrial Department, with the mandate to articulate a strategy for viticulture development and promote wine exports. The Department also supervises the management of the 11 state-owned wineries and others in which the state retains an equity stake. While the Department's specific mandate implies a fairly limited role, there remains some concern about a broader underlying agenda.

The Moldvin Department becomes involved when wine exporters seek exemption from the regulation that all bottled wine be labeled in the Moldovan language to meet the requirements of importing countries. While it is not a particularly onerous process, the need for the regulation in the first place is not obvious.

### *Taxes and Fees*

All wineries are obliged to pay an annual license fee. The fee has increased significantly in recent years, from MDL 9,000 in 1999 to MDL 36,000, irrespective of size. The flat license fee imposes a relatively greater burden on the smaller wineries.

Using the destination principle for indirect taxation, the government currently places a 5-percent value-added tax (VAT) on domestically produced grapes, and a 20 percent VAT and 30 percent excise tax on imported bottles and corks. In principle, all of these indirect taxes (except on fuel) are to be reimbursed when the goods are exported. The reimbursement of VAT and excise payments is routinely delayed by six months, and exporters have waited for more than a year. These delays add to cash flow problems, and the government closed a loophole that allowed for attempts to mitigate these impacts by trading VAT receivables at a discount. In effect, delays in the reimbursement of indirect taxes impose an export tax that can amount to 2-3 percent of total sales in a highly price-sensitive market segment.

Exporters also face some pressure to pay to speed up complex customs clearance procedures. These pressures are greater for exports to the CIS countries than for those to the EU.

### *Revenue Repatriation Requirements*

Government regulations require that all revenue from the export of wine be repatriated within 90 days. Exporters face fines equivalent to 0.3 percent of the total invoice per day over the 90-day period. While the tax authorities believe that 90 days is sufficient, exporters argue that more time is required, especially for exports to CIS countries. For example, transit time for deliveries to distant markets like Vladivostok may take 80 days. Moreover, the practice of payment only after some part of the shipment has been sold in the market also adds to the time lag in receiving the revenue.

Nonpayment by the importer can, of course, create serious problems for the exporter. Wineries therefore have to commit resources to preempt fines through challenges in the legal system, adding to the cost of production and marketing. The regulatory requirement does not make much sense, since it is in the interest of the wine exporters to obtain payment as quickly as possible, given the cost of working capital.

## Problems and Responses

The analysis of Moldova's wine cluster has identified both opportunities for and obstacles to improving competitive performance. Entrepreneurs in the cluster are taking steps to address some of the obstacles and to exploit opportunities, yet individual action will be insufficient to leverage the cluster's full economic potential for employment and income generation. Optimal results will require joint action on the part of the private producers in the cluster as well as of government representatives. The following observations and suggestions are highly selective; they fall far short of articulating an effective strategy for realizing the potential of this cluster, because such a strategy cannot be formulated without the active participation and engagement of all stakeholders.[11]

| | |
|---|---|
| **Problem**: | The style and quality of Moldovan wines are out of step with the requirements and expectations of existing and emerging premium markets. |
| **Response**: | Current efforts to improve quality and move toward New World wine styles need to be accelerated and expanded. See Annex B for specific recommendations. |
| **Problem:** | Moldovan wines in the Russian markets are outflanked by new entrants in the low- to medium- price market segment. |
| **Response:** | Consider a joint marketing campaign along the lines of the "new Moldovan wines," in conjunction with efforts to improve quality and style. |
| **Problem**: | Premium markets in the EU and emerging in the CIS have a preference for dry wines with an alcohol content of 12 percent, which requires grapes with a 22-23 percent sugar content. |

[11] Some of the suggestions reflect or restate recommendations in the wine subsector case study undertaken in the context of the World Bank's Trade Diagnostic Study.

| | |
|---|---|
| **Responses**: | |
| **(1)** | To bridge the gap until new plantings come on line, increase incentives to the vignerons (winemakers) to prune and time the harvest for quality rather than quantity by offering premium payments linked to quality indicators. |
| **(2)** | Launch a program to enhance growers' knowledge of modern viticultural techniques, with particular emphasis on vine training, canopy management, and soil nutrient and mineral composition. |
| **Problem**: | Regulatory requirements and administrative procedures add to the cost of wine production aimed at a highly price-sensitive market segment. |
| **Responses**: | |
| **(1)** | Abolish the requirement for the repatriation of funds within 90 days. |
| **(2)** | Simplify/accelerate the system of reimbursement of indirect taxes for wine exports. |
| **(3)** | Review the implications of regulatory provisions and administrative procedures, including fees, for smaller wineries, and revise to reduce or eliminate elements that discriminate against smaller producers. |
| **Problem**: | The financial system fails at its task of smoothing the transformation of a key sector in the economy. |
| **Responses**: | |
| **(1)** | Ease restrictions on foreign currency borrowing. |
| **(2)** | Engage banks to develop new instruments and services aimed at the specific requirements of the wine cluster. |
| **Problem**: | Only one laboratory is accredited to certify compliance with the EU VI standards, which are likely to find their way into Russia's market architecture as well. Moreover, testing at that laboratory is costly. |
| **Response**: | Explore jointly opportunities to establish one or more competing laboratories that can be accredited by the EU. |

# THE WINE CLUSTER
# ANNEX A: THE RUSSIAN WINE MARKET[12]

## Market Overview and Trends

The wine market in Russia is characterized by a huge variety of available products, with enormous amount of choice in every price segment. The wine sector grows at 30-35 percent per year, with low (around 9 percent) alcohol wines being the most popular. Over the next five years, per capita wine consumption is expected to quadruple.
There are three types of wines on the market:

1. Foreign wines, imported from France, Italy, Germany, Spain, and the so-called "New World" wines—Chile, Argentina, U.S., South Africa and Australia.
2. Wines imported from CIS countries, mostly Moldova and Georgia.
3. Russian wines, produced from local or cheap imported wine material, often Moldovan.

The prevailing view is that demand for better quality, more expensive wines has been increasing. As income levels are rising, people are showing increased interest in imported wines from Western Europe (mainly Italy and France, but also Bulgaria) and from the New World—Chile, South Africa, U.S., Argentina, and Australia. The major market segments can be defined as follows:

- *Elite wines:* Ruble (RUB) 250–300/bottle = US$9–10, and more; this market segment is small, with a 5 percent market share, but growing. There are people who can afford to keep their own wine cellars and there are wine import companies that focus exclusively on individual clients. (Moldovan wine is not among the products they offer, although some Georgian wines fall into this category.)
- *Medium-priced wines:* RUB 90–250/bottle US$3-9; this segment accounts for 10 percent of the market. Middle class consumers become more knowledgeable in wine and its ingredients. They know how much they can spend and are willing to choose the best quality within that price range.
- *Low-priced wines:* Less than RUB 90/bottle = US$3; for the majority of the population price is still the first criterion in wine choice, and this segment still accounts for 85 percent of the wine market.

Red wines make up 71 percent of sales in Moscow and 64 percent in other parts of the country. Tastes for the type of wine have not been changing drastically: 47 percent of the population drinks semisweet and 33 percent drink semidry wines.

With higher incomes, more people are also able to eat out more often, and restaurants in Russia usually offer more expensive, high-end wines on the menu. Generally, it is not considered "prestigious" to order cheap wine in restaurants, and Italian and French wines

[12] Prepared by Marina Krivoshlykova, DAI, May 2004.

dominate wine lists in better restaurants. Even cheaper middle class restaurants in Moscow and St. Petersburg would not offer Russian or Moldovan wines on their menu.

Russian consumers are also becoming more sophisticated in their wine preferences. More people are now interested in wine and pay attention to its qualities. Wine is in fashion. Although it is doubtful that most people are well versed in wine varieties and tastes, the level of knowledge is growing. Consumers who can afford to spend money on better wine select what is considered more prestigious and fashionable. High quality wine is being associated with better lifestyle, and image plays a major role. Marketing and advertisements increasingly shape consumer preferences.

Novelty is also an important factor. Preferences among Russian consumers are evolving, and people tend to try different and new products. Even though wine and food markets in Russia offer enormous choice and variety, people are still excited about trying new products, which were unavailable during Soviet times.

In the past years, consumers, not knowing much about wine varieties, tended to choose wine by the looks of the bottle. Choices are becoming more deliberate as more specialized wine stores are opening up, with wine consultants on staff. (Some importers are starting to open up their own retail stores, because competition for shelf space in supermarkets is very high, with fees averaging US$500 per month, per store.)

The trends are most pronounced for Moscow and other major cities, where income levels are higher. The situation in the regions and provincial towns is different. With lower income levels, cheap Russian and Moldovan wines continue to prevail there.

### *Advertising*

While the wine market has been expanding, after the sharp contraction in the wake of Russia's financial crises, new products still need significant promotion and marketing. Aggressive marketing is an important feature of the Russian wine market. Advertising expenditures are growing and promotion budgets are significant. Companies come up with more and more new ways of presenting their product. There are a number of printed materials dedicated exclusively to wine, some free, focused on promoting high-end, high quality wine. A lot of attention is being paid to image; wine is being presented in conjunction with food, travel, and life-style. Middle-income segments of the population are especially influenced because they often would like to associate themselves with a better and more prestigious life-style. Wine magazines and papers are also important because television advertisement of alcohol products is not allowed under Russian law. These publications and advertisements do not cover Moldovan wines. They focus mostly on Italian, French, Chilean, some Argentinean, and some high-end Georgian wines.

### *Wine versus vodka and beer*

Vodka and beer still occupy a larger share of the market than wine, but the share of wine has been growing faster. Beer is still very popular, but growth rates are said to have slowed down

recently from 20–30 percent to 4 percent, since the beer market is getting saturated. A common opinion is that people in Russia will always drink vodka. But those who prefer wine usually drink less vodka, which is more popular in specific segments of the population; so these products do not necessarily compete for the same market. And unlike wine, vodka and beer consumption are seasonal, with vodka being more popular in winter and beer in summer.

## Non-CIS Imports

Imports from non-CIS countries account for roughly 40 percent of total imports. This market is highly structured and divided among a few importers. They usually focus on this segment alone and do not compete directly with each other, often having exclusive distribution rights. There are practically no new companies entering the market. On the wine market overall, 40-45 percent of all brands are being sold through exclusive distributors.

French (14.4 percent of imports) and Italian (5.1 percent) wines are the leaders among non-CIS sources. In recent years, the popularity of Italian wines has been growing faster than that of French wines. They are considered to offer a greater variety of taste. Italian exporters have organized a major marketing campaign, including exhibitions where lots of Italian producers and winemaking associations participated. Italian restaurants are also widely popular. The majority of French and Italian wines on the market cost between RUB 250 and RUB 500. However, French wines are available in every price category from RUB 200 (not cheap, but affordable) to RUB 1,000 and up. Spanish wine (4.2 percent of imports) has been gaining market share in recent years.

The share of New World wines is the fastest growing in this category. More people now learn about Chilean, South African, and Argentinean wines. These wines are new, exotic, and popular. Price is more or less affordable and the quality is good. Chile and South Africa occupy middle and higher price segments and target already saturated consumers.

Chilean wines typically cost between RUB 250 and 600/bottle; they are being promoted aggressively through wine festivals, wine tasting, and so on. Californian wines find it hard to compete with them on price and also with their aggressive marketing campaign. But American producers also try to create an image of American wine in Russia and host festivals of Californian wines. They do not expect to be able to challenge French wines, but they are making consistent efforts to take a hold on the Russian market. South African wines are in a similar category; with prices ranging from RUB 350 to 500 per bottle.

Recent Argentinean imports have targeted the low-priced segment, in part taking advantage of the peso devaluation, with prices ranging from RUB 114 to 155 per bottle, in the same category as Moldovan wine of a slightly more expensive type. While Argentinean wine is a new trend on the market, it remains to be seen if it will be able to challenge Moldovan wines. Importers feel that Chilean and Australian wines were known before the introduction of Argentinean wines. Argentinean wine has been promoted, but to a lesser extent than Italian and Californian wine; nevertheless, it occupies a spot next to the high-end wines in promotional materials. A Russian producer of good quality Moldovan wines, with factories in

Moldova, appeared convinced that Argentinean wines will not present a long-term challenge to Moldovan wines, primarily because of their low reputation on the world wine market.

## CIS Imports

Moldovan and Georgian wines are considered a mass product and are affordable to the majority of the population, with Moldovan wine being the more affordable, ranging from RUB 60 to 300 per bottle. Demand for Moldovan wines is heavily determined by income level. When price drives the purchasing decision, people buy Moldovan wines. The demand for Moldovan wine is still huge, because this is what the majority of people can afford, and most people would prefer them to Russian wines. Moldovan wines on the cheaper side are attractive to consumers of the upper low-income category, that is, those who can afford to spend a little more than the price of cheap Russian wine. Ukrainian wines, primarily from the Crimea, have been losing market share, from 5.6 percent in 1998 to 3.8 percent in 2003.

There are also higher quality, more expensive Moldovan wines available on the market. Some companies focus particularly on good quality mid-range Moldovan wines. However, the challenge here is that as new imported wines are being introduced in a similar price category, people are likely to try new products. Some observers believe that after having tried French and Italian wines, people who can afford it will try exotic New World wines; and after having tried a variety of wines and having lots of choice available, they are unlikely to go back to Moldovan wines. The variety of products on the market is the main trend presenting a challenge to Moldovan wines. The consensus is that Moldovan wines are still very popular mostly because of price and that people will continue to buy them, especially in provincial regions. But Moldovan wines of a more expensive category face competition from other imported wines.

Georgian wines (8.9 percent of imports in 2003) tend to be more expensive (RUB 250 per bottle, and above). Georgian wines are present in most price categories, and offer more choices in the higher-end category. There are some Georgian brands that are considered elite wines and can be found on restaurant menus. Companies working with wealthy individual clients offer some Georgian wines, along with Italian and other elite wines. Review of promotional materials also shows that some brands of Georgian wines are being marketed as high-quality elite types. More sophisticated consumers will still rather choose Italian, French, South African, or Chilean wines, but there are loyal consumers who choose high quality Georgian wines, which have traditionally been considered very good. Brand loyalty continues, despite significant counterfeiting problems.

## Russian Wines

Russian wines compete exclusively on price and are popular with the low-income population. They are produced in high volumes and their market reportedly grew in 2002 by 15 percent and in 2003 by 10 percent. Producers of Russian wine use either local or imported materials. These wines are cheaper even than the low-end Moldovan wines. Russian wines are also

available boxed in inexpensive "party packs." Russian and Moldovan wines are in the same price category RUB 60-120, but Moldovan wine is more prestigious than Russian. However, Russian wines produced in the traditional winemaking regions, like Krasnodar region, are considered good quality and they find their market. The cheapest Russian wine, which is considered low quality, is produced and bottled in various Russian regions from imported materials.

## Position of Moldovan Wines in the Russian Market

### *Reputation*

Moldovan wines have a table wine reputation, are considered "cheap" and of poor quality. No wine from Moldova is considered to have a high-end image, like Armenian brandy or some quality Georgian wines. They have also been present on the Russian market forever, which sometimes plays to their disadvantage, when consumers who do not have set preferences look for something new. The overall perception is that it is not prestigious to drink Moldovan wines. Nevertheless, a few Moldovan names, like *Monastyrskaya Izba* and *Dusha Monaha,*" have traditionally been known to be quite good and are often the choice of consumers who are not very knowledgeable and who make their selection by the name they have heard.

### *Restaurant Sector*

Moldovan wine is not served in expensive and popular middle class restaurants and nightclubs. Even regular, more affordable restaurants do not offer Moldovan wines, with the exception of restaurants in provincial cities and regions. Italian and French wines are the most popular in restaurants. Expensive restaurants sometimes offer good Georgian wines, along with wines from Spain, Chile, and South Africa.

### *Marketing*

There appears to be little if any marketing of Moldovan wines on the Russian market. Marketing efforts are heavily focused on high-end western wines—Italian, French, Chilean, Argentinean, with Georgia being the only CIS exception. As a result, Moldovan producers are being left out of the trend setting on the Russian wine market.

### *Packaging*

In general, packaging and presentation of wines is very well developed and packaging of Russian, Georgian, and Moldovan wines is equally good. Georgian wines tend to offer a little bit more traditional noble-looking packaging, like old-fashioned stone bottles. Some believe that Moldovan wines are behind Russian and Georgian wines in terms of packaging, yet others think that Moldovan packaging is quite competitive. Generally, Moldovan packaging has a lot of variety and no common theme. There is some interesting presentation, focusing on tradition and history, but there is also packaging that looks a little cheap and flashy,

compared to others. Some Moldovan brands try to look similar to French wines, with simple, less colorful labels.

### *Importers' Perspective*

Moldovan wine importers see demand for Moldovan wine as still very high and growing, but with demand coming mostly from the lower-price segment. In their view, the declining market share of Moldovan wine in Russia is explained by the introduction of new imported and Russian wines, not a decrease in demand for Moldovan wine. The Moldovan share in the wine market is viewed as declining for the same reason that the share of French wines in the world wine market is declining—taste is changing because of greater consumption and the availability of a huge variety of new products.

### *Problems*

One opinion is that, traditionally, Moldovan wine producers were represented by large and medium-sized factories, but in the last couple of years many small producers started entering the market, focusing on producing large qualities of cheap wine, with little attention paid to quality. These producers target the lowest-end Russian consumer. This trend has had a negative effect on the overall image of Moldovan wine on the Russian market.

Moldovan producers often took traditional proximity and success on the Russian market for granted. Low-quality, cheap Moldovan wine flooded the Russian market. At that time Russian consumers were not very demanding. Many Moldovan producers assumed that Russian consumers would continue to buy cheap Moldovan wine and tended to give little thought to the emerging competition in the Russian market. They did not see a need to improve production or promote the good image of Moldovan wines in Russia. In recent years, with increased competition, the quality of Moldovan wines may have improved somewhat, but there continues to be a traditional lack of promotion.

As a result, even knowledgeable people in Russia are often not aware of the qualities and potential of Moldovan wine. High-quality Moldovan wines are available, but current image is poor and it is hard to win back the Russian high-end consumer. Marketing of Moldovan wines is poor and often nonexistent. Moldovan wines are also poorly represented at exhibitions, a very competitive area on the Russian wine market. Promotion requires a sufficient financial commitment, and importers of Moldovan wine are reluctant to make that commitment and fund marketing campaigns, hoping that since the wine is cheap it will sell anyway.

There is a tendency for growth in the share of higher quality Moldovan wines on the Russian market. However, in 2002 there were 60 importers of Moldovan wines and still only 15 of them focused on high quality wine. They held 40 percent of the market, with 60 percent going to the low quality Moldovan wine.

## Recommendations

A marketing effort is needed that would promote a strong Moldovan brand, with a focus on old winemaking traditions and history. Promotion of a good quality standard is also needed in order to improve the image of Moldovan wines and to reintroduce Russian consumers to their qualities. Promotion campaigns could target restaurants, bars, and nightclubs, in particular.

Some suggest that Moldovan producers need to market their wines as high quality and move to the premium price category. Others think it would be better to target the medium-price segment, offering consistently good quality wine for a reasonable price. Crimean wine is cited as an example of a high-end category wine, priced at about RUB 500 a bottle, which has not become very popular or sold very well. One Russian producer/importer of Moldovan wines has been successful in offering good quality wine for middle segment and creating a positive image of its brands.

## Sources

### *Importers*

- *Luding* (wine importer, including Moldovan wines).
- *MGB - Impax*, Vlada Zaiko (high-end importer, working with individual clients; do not import Moldovan wines; focus on Italian, French, New World, and some Georgian).
- *Garling* (Meginkom CB), Michail Manatov (importer of Moldovan and other wines).
- *Dionis-Club*, Ivan Bubnov (importer/producer of Moldovan and Georgian wines; has a reputation for good quality wine; owns factories in Moldova and Georgia).
- *GB Holding Vin* (one of the largest importers from Moldova).
- American Chamber of Commerce in Russia, Marina Popova.
- National Alcohol Association.
- Trade Representative (U.S. Embassy), Olga Tajbahtina.
- BISNIS representative in Russia, Alla Mavrina.

### *Distributors*

*Aromatnij Mir* (specialized wine store; direct distribution chain for Aroma; one of the major importing companies).

### *Supermarkets*

- *Perekrestok*
- *Sedjmoj Kontinent*
- *Pamstor*

### *Specialized Wine Publications*

*Vinnaja Karta, Pod Gradusom, Bestnik Aromatnogo Mira*

### *Other*

Newspaper articles, market reviews, interviews, and the like.

# THE WINE CLUSTER
# ANNEX B: MOVING TOWARD A NEW WORLD WINE STYLE

There are two important categories of impediment to commercial success for Moldovan wines in premium markets: ***quality*** and ***style***.

Many wines produced in Moldova have inadequate quality for presentation in premium markets. Even so, some producers are offering wines that would be readily accepted in premium markets. However, most wines tasted are not suitable for western markets because of inappropriate style, irrespective of their quality. The customary wine styles in Moldova are appreciated in Moldova's main export markets now, that is, Russia and other CIS states, mainly because of their price advantage. Generally speaking, however, wines popular in the West tend to be fruitier: the taste of the grape is more evident. Bouquets are more intense, and the mouth feel is fuller.

Notable examples of wine style incompatibilities, with respect to higher value markets are:

- **Tannins**—For red wines, the preference is for more tannins. But the tannins must be soft and well integrated, not the green tannins typical of wines drunk too soon.

- **Oak**—Another important style difference is oak: western style red wines are usually matured for a time in small oak barrels, so that the bouquet and flavor include components derived from new oak, which is usually "toasted" to a degree.

  The oaked style of white wine, especially Chardonnay, is still very popular in premium markets. This style usually incorporates oak by fermenting in new barrels. Of course, oak is expensive, and using it increases production costs. But Eastern European oak is as useful as French or American oak, and it is a lot cheaper. Moldovan oak, however, tends to grow too fast and so to be insufficiently dense for wine maturation. That is, the oak flavor components are not as concentrated as in slower growing American, Hungarian, French, and Russian oak. Some Romanian oak is sufficiently dense, and has been used successfully for wine maturation.

  The tradition of maturation in small oak barrels is not widely practiced in Moldova and so very few wines exhibit the added complexity derived from oak. However, some of the most progressive Moldovan companies have begun to experiment with French oak. For example, *Bas Vinex* have about 1,000 barrels at their Romanesti winery. They bought French oak staves, assembled by local coopers.

- **Large, old oak barrels**—Unfortunately, many older wineries still cling to the tradition of "aging" both red and white wine in large, old oak barrels. This is a sure way to lose fruit flavor and aroma, and if they are not thoroughly cleaned, they are a source of off-flavors and volatility. There is no place in modem winemaking for large oak barrels. They are a habit inherited from a time when no better material was available for the fabrication of wine storage vessels. There is no point in adopting modern techniques to retain maximum fruit flavor and aroma, and then to throw it away by storing wine in large oak barrels.

- **White wine fermentation temperature**—Today's premium wine markets demand that wines be made according to techniques that maximize the retention of fruit flavor and aroma. Controlled temperature fermentation is absolutely essential for maximum retention of fruit flavor and aroma in white wine. If no cooling is used, ferments will progress naturally at temperatures of at least 28°C, and could even be as high as 35°C, depending on the weather, size, and shape of the fermentation tank and the yeast strain. Even if the weather is cold, the heat generated by fermentation will push temperatures too high. During hot ferments, most of the desirable fruit flavors and aromas are burnt off, leaving the wine insipid.

  Most Moldovan wineries have refrigeration plants and/or in-tank heat exchangers to control fermentation temperatures. However, there often prevails a mistaken belief that control of fermentation to a maximum temperature of 18°C is adequate to maximize retention of fruit flavor and aroma. A maximum temperature of 15°C will deliver substantially better results. This may entail acquisition of additional refrigeration capacity. Additional fermentation capacity may also be required, since cooler ferments progress more slowly, thus allowing fewer fermenter turnarounds during the harvest period. However, in Moldova there is generally an excess of capacity, given the decline in fruit supply over the last ten years.

- **Red wine fermentation temperature**—Some Moldovan winemakers believe that red wine fermentation should be controlled to a maximum of 24–26°C. Many newer wineries even have fermenters fitted with cooling bands, in order to maintain this regime. However, ideally, a spike of the equivalent of 29°C should be reached during red fermentation, for optimum extraction of color and tannin. Once this has been achieved, cooling can be applied. For a fermenter of 30,000 liters, 29° C should be reached spontaneously.

  **Note:** This is a general rule of thumb, which may require fine tuning for some varieties, and for style nuances. Pinot Noir, for example, may require a presoak at low temperature for some time prior to onset of fermentation, to optimize color and extract.

  Smaller fermenters may require must warming, larger fermenters will require must cooling.

- **Inert gases**—There appears to be inadequate appreciation of the damaging effects of oxidation with respect to fruit flavor and aroma retention. At almost all wineries, inert gases have to be used more pervasively, to avoid contact of must and wine with air.

  **Note:** Most wine companies need to install or upgrade equipment to apply inert gases during bottling.

- **Hot filling**—Most Moldovan wine packaging companies pasteurize bottles after filling, to avoid microbial spoilage in the bottle after packaging. This practice largely destroys the fruit flavor and aroma of the wine. With wines that are comparatively weak in fruit flavor and aroma intensity, this is not a big disadvantage, compared to the risk of bottled

wine becoming undrinkable from microbial spoilage. However, there is obviously no point in trying to maximize retention of fruit flavor and aroma, and then to throw it away by hot filling. Standards of hygiene and wine filtering techniques must be upgraded to facilitate *cold-filling*, or sterile filling, even for sweet wines.

- **General hygiene**—Both newer and older wineries often have standards of hygiene inadequate for the production of premium wines. Standards for sanitizing equipment and storage vessels are usually not documented, and are applied haphazardly. Tartrate scale within "cleaned" tanks is the rule, rather than the exception. This is so even for one-year-old stainless steel tanks. Tartrate scale is a haven for wine spoilage microbes.

# INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)

## Introduction

The information and communications technology (ICT) industry in Moldova is one of untapped potential. During the Soviet era, Moldova was a center for technology in electronics and military production. The region developed a high concentration of skilled professionals in physics, mathematics, and engineering. Moreover, Moldova has a long history and culture of technical innovation. Much of this culture and capacity still exists. Consequently, the country possesses a large computer- and technology- related talent pool with capacity for much greater achievements.

There is growth in the cluster, driven by demand for high-tech products and services across Western Europe, Russia, and the United States.[13] Moldova possesses substantial competitive advantages in the international market as a result of pool of skilled labor, at costs that are lower relative to other western nations. Moldova is also the only country fully bilingual in a Romanic and a Slavic language. With little domestic demand, the ICT cluster's focus is decidedly towards export, despite the fact that Moldova is still a net importer of computer products and services, with the exception of data base development.[14]

With an estimated total turnover of US$13.4 million, Moldova's ICT services sector is small in comparison to its closest neighbors, Ukraine and Romania, even allowing for differences in the size of the economies. Chisinau is home to 141 registered companies, from a total of 154 software-related companies in Moldova, and is estimated to account for 99.95 percent of the total ICT production. The remaining ICT production points are in Balti, Cahul, Orhei, and Drochia, but their share is negligible. Registered companies, however, reflect only a small percentage of the industry, since 70-90 percent of ICT activities are conducted in the so-called shadow market.

The industry provides ICT products and services through five distinct economic activities, including consulting services, custom and ready-made software production, data processing, data base development, technical support and repair, and other computer-related services. The most common product types produced by the ICT cluster include web content management applications, news syndication applications, billing and accounting software, banking systems, encryption utilities, e-commerce applications, electronic post programs, and search engines.

Although small, the Moldovan ICT cluster has many of the advanced factor endowments for a successful and thriving technology industry. Unfortunately, all these positive aspects of the

[13] Western Europe accounts for 34 percent of Moldova's ICT exports, Russia for 24 percent, and the U.S. for 25 percent.

[14] Exports of programming products and services in 2002 were US$117,000 and imports were US$181,000. Imports of data base development services were zero in 2002, exports were US$725,000 and the total production was US$11,485,000.

cluster are undermined by several weaknesses and problems plaguing the sector. In some cases, certain positive characteristics of the market may actually be acting to break the industry apart rather than coalesce it. In other cases, the very business practices of many companies are having a damaging effect on the growth of the industry.

## Cluster Composition

### *The Competitors*

According to the Ministry of Economy of Moldova, there are 316 officially registered companies in the ICT industry, with 154 of them delivering software-related products and services. The total number of companies in the industry cannot be accurately accounted for, given the proliferation of the shadow market and unclear registration practices. Industry experts estimate that ICT-related activities employ some 40,000 people.[15]

Approximately 20 relatively large companies dominate the legitimate market, typically with 25 to 100 employees. The other 130 or so firms are mostly mall operations, with 1-10 employees. Most of the companies are privately owned and operated, but there remain a number of state-owned enterprises providing services. The national telecommunications provider, *MoldTelecom* (MTC), is a state-owned de facto monopoly. Although the Government of the Republic of Moldova demonopolized fixed-line telecommunications in 2004, competition is still yet to emerge. The Department of Information Technology is a state-owned entity with more than 400 professionals; it is charged with setting policy, but also competes directly with the private sector. Across the sector, ICT companies are engaged in a wide variety of similar activities in:

- **Software development:** system infrastructure software, application tools, standard software, custom software, embedded software, web development, production management, scientific research and information systems.

- **ICT services:** training, consultancy, implementation and system integration, operations management, custom programming, and support services.

### *The Complementors*

The major input to the ICT cluster is human resources. Although Moldova is a small country, it has a relatively high level of education. There are two institutions that train the majority of ICT professionals: the National University of Moldova and the National Technical University. Also, the Academy of Economic Studies of Moldova has a department of management information systems. There are approximately 400 higher education specialists at these institutions and approximately 1,000 people are trained annually.

[15] Source: Market Study of the Information Software Technology Sector in Moldova, MEPO for BIZPRO, 2004.

Moldova has one national telecom provider, *MoldTelecom*, and seven Internet service providers operating officially in the country. Currently there are no sources of venture capital and few foreign direct investors for the ICT industry, but the prospects for the future are promising. Local banks are generally not considered a good source of capital because of their reluctance to lend at affordable rates. BIZPRO is working with banks to develop new instruments for providing financing to small and medium-sized enterprises, which might include ICT operations.

Most ICT products and services are sold directly by the providers to their end customers in Moldova and some foreign markets. In cases where companies are exporting services, partners or joint ventures in the target markets normally perform the sales and marketing. The Moldovan company's identity remains concealed or is exposed later in the sales process. There are no other downstream providers of intermediation services.

## Firm Structure and Rivalry

### *Degree of Competition and Cooperation*

There is virtually no competition in the Moldovan ICT market among product developers. Among service providers, such as web development and hosting, there is some competition for building web sites for larger companies. However, the market for corporate web development in Moldova is small, approximately US$100,000 annually.

With the exception of accounting software for the local market, and web design services, the ICT industry is highly specialized, to the point where no meaningful competition exists among companies. Low domestic demand drives most companies and professionals to be outwardly focused in pursuit of higher wages and profit potential. As such, the ICT sector has fragmented into specialization areas or niches that enable the companies to avoid competing locally. According to a report by the Moldova Export Promotion Organization (MEPO), "there is no usually strong competition among the local producers concerning ready-made software products because they normally offer quite unique for the market products … the number of products approximately is equal to the number of companies."

There is also surprisingly little cooperation within the industry. Moldova has no ICT association to provide a unifying force for collaboration and advocacy. There are no professional societies, clubs, or other groups to facilitate communication and the sharing of ideas. This fragmentation has left the companies in the industry isolated and self-dependent. Some companies focus exclusively on exporting, without any attention to or association with the local market.

### *Innovative Capacity and Productivity*

The lack of reliable data because of the size of the shadow market and the unwillingness of companies to disclose financial information makes it impossible accurately to measure the productivity of the industry, using standard per capita metrics. The best data available

indicate a total output of ICT goods and services of US$13.4 million for 2003. Based on estimates of 40,000 persons involved in the sector, per capita production would be US$335. However, these numbers cannot be verified.

Innovative capacity is also a matter of opinion and some faith. Clearly there are a number of companies providing services to markets in Europe and the U.S.. These companies have grown rapidly, indicating a strong demand for these specific services. It can therefore be assumed that at least a few companies are meeting the global benchmark for innovation.[16]

Industry studies also indicate that some companies employ industry standard software development protocols such as Rational Unified Process (RUP), IEEE standards for software development, Prince 2 (British standard), and Microsoft Solutions Framework (MSF). The technology platforms trend heavily in the direction of Microsoft, including Windows and MS Net development frameworks. The concentration of other technologies becomes more dispersed across other languages, operating systems, and data base management systems such as C++, Java, Unix and Linux, and Oracle respectively.[17]

Too few companies currently have internationally recognized quality certificates (only DEEPLACE with ISO 9001: 2000 certification and COMPUDAVA applying). Only a few more are certified partners of multinational companies like Microsoft and Oracle. The percentage of individual professional certifications is even rarer.

These standards, protocols, languages, and certifications are indicators that the industry is current with some best practices but do not necessarily demonstrate innovation. It is difficult to imagine that there is significant innovation in the industry, given the lack of competition among firms. However, Moldova does have an annual web site competition among local companies and university students have persistently performed well in the World Information Technology Olympiad.

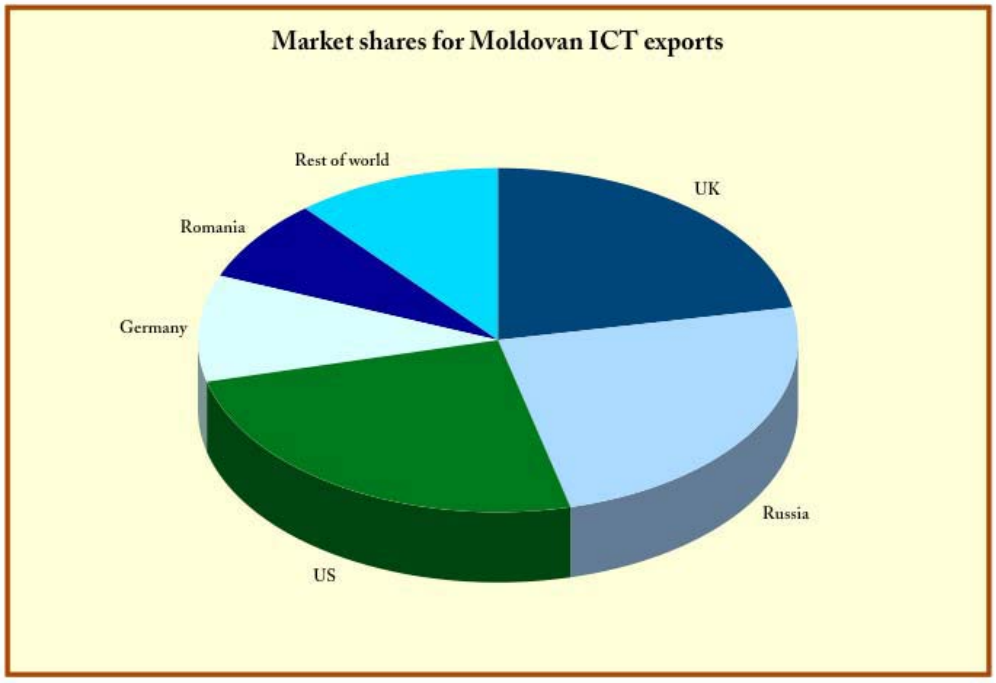
## Demand Conditions

### *Markets*

The market for ICT products and services depends on what specific aspect of ICT is considered. Based on available statistics, the domestic market is the largest source of business for software programming. Web development is almost entirely local. Export of data base development services represents only 6.3 percent of total production, and Internet Service Providers are of course focused exclusively on Moldova. The three major export markets for ICT products and services are the UK, U.S., and Russia as indicated in Figure 12:

[16] CAGR estimated at 50 percent, 2001-2003.
[17] Source: Market Study of the Informational Software Technology Sector in Moldova, MEPO for BIZPRO, 2004.

**Figure 12: Principal export markets for Moldova's ICT cluster**



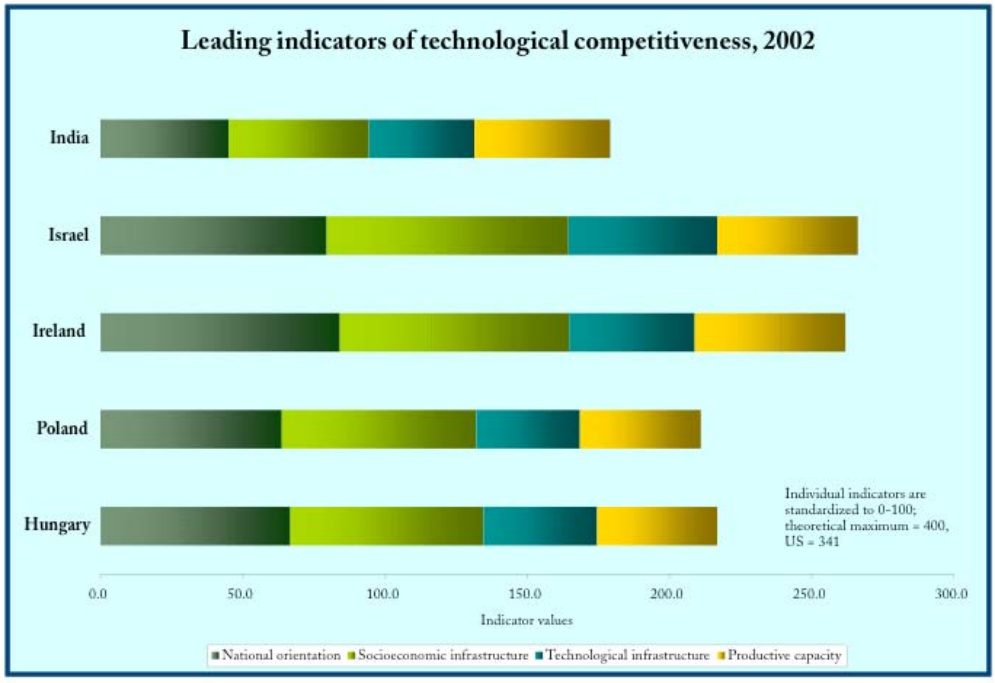

Many of the domestic ICT products and services for standard software are provided by the shadow market and black market. Industry professionals also estimate that the shadow market serves a large percentage of exports, but statistics are impossible to estimate. Most companies operating in the open are owned by foreign entities and are almost exclusively oriented toward export.

## *Major Competitors*

Offshore software development and data processing is a global business that is becoming more widespread as communications and transportation barriers decline. Who represents competition to the Moldovan ICT industry is a matter of some debate. For open companies doing business primarily in the UK and U.S., the major competing countries include India, Russia, China, and local companies in these markets. For the Russian market, Ukraine and Romania dominate. The same is also likely true for the shadow market, where Eastern Europe is a hub for undeclared ICT commercial transactions. Specific companies identified as competitors include *Cosperski Laboratory* for antivirus software and *Abby* for text recognition software, both in Russia.

The U.S. National Science Foundation (NSF) has identified the four leading indicators of technological competitiveness: national orientation, socioeconomic infrastructure, technological infrastructure, and productive capacity. Figure 13 shows the composite indicator for selected countries in the NSF rankings that may be considered as Moldova's competitors: Ireland and Israel lead the group, primarily on the basis of their national orientation, with Poland and Hungary outscoring India.

**Figure 13: Technological competitiveness for selected countries**




Source: National Science Foundation (U.S.)

## *Market Trends and Prospects*

A number of factors in the global ICT marketplace have conspired to slow the growth of spending in the last two years, including economic recession, stock market decline, international terrorism, lack of capital investment and project deferrals, and an oversupply of telecommunications capacity.

Despite the economic slowdown, the future for global ICT remains promising. Many areas of the market will still continue expansion, including the continuing development of the Internet and related technologies, intellectual property protection, privatization of infrastructure, continued adoption of e-business, harmonization of international laws on taxation, security, and the drive of developing countries to achieve the productivity through information technology.[18]

Some interesting trends from the World Information Technology and Services Association (WITSA) include:

- The top 10 information economies account for 80 percent of the total global ICT market.
- As a consumer market, China's B2B spending has increased 60-fold, and the country also boasts the annual growth of personal computers in schools.
- Countries in Eastern Europe are experiencing significant increases in ICT spending.

[18] *Digital Planet 2002:The Global Information Economy*, World Information Technology and Services Association.

- The Middle East/Africa spends more on ICT relative to per capita income than any other region.
- Internet and e-business continue to gain momentum, with B2B spending up 83 percent.
- Offshore outsourcing is a small part of the USD$5 trillion outsourcing market, but growing at 15 percent per year.

As a result of smaller corporate ICT budgets and overall efforts to cut costs, ICT development and process outsourcing are shifting to developing countries with highly skilled lower-cost labor forces. This trend is likely to continue and shift around the world, as capital finds ever-decreasing factor costs.

## Related and Supporting Industries

### *Types and Locations*

There are only a small number of supporting industries for the ICT sector. The most obvious is telecommunications, including Internet Service Providers (ISP) and Voice over IP. Until recently, this segment was controlled by the state-owned monopoly, *MoldTelecom*. To date, no telecom company has officially entered the market to compete with *MoldTelecom*. There are approximately seven ISPs operating in Moldova, with over half the number of subscribers in Chisinau. There are currently two cellular companies across Moldova. Coverage is widespread in the country and is generally viewed as high quality. Moldova also has a number of business service providers offering accountancy and consulting services such as *KPMG* and *Ernst & Young*.

Name brand hardware is available in Moldova at a 5-10 percent higher cost than in the U.S.. Name brands represent about 20 percent of the market, with the remainder covered by clones and component parts. Most packaged software is sold over the black market at spectacularly low prices.

### *Performance and Constraints*

Telecommunications costs and capacity are a major constraint to Moldova's ICT industry. Years of monopoly ownership have left the Moldovan telecom infrastructure lacking in quality and coverage. Penetration rates for fixed line telephony are 19.6 percent, mobile telephony 10 percent, and Internet 1.36 percent. These measures compare poorly with Western Europe, where rates are 40, 50, and 36 percent, respectively. In Eastern Europe, penetration averages approximately 28 percent. There are also problems affecting the development of the telecom services sector:

- Lack of a national telecommunications strategy to stimulate investment;
- Frequent changes in policies and tactics of state authorities;
- Low level of state company efficiency;
- Declining foreign sources of capital for telecommunications investments;
- Low demand because of low incomes in the population.

While market penetration rates are low, the growth trend is positive across all segments of the communications industry. Growth rates over the past six years have been dramatic, with some years recording more than 100 percent. As markets remain flat in Europe, Asia, and the U.S., Moldova retains the potential for continued development of the sector. If policy reform and liberalization proceed as expected, the communications gap between Moldova and Europe may narrow rapidly, enabling ICT companies to continue their technological progress.

## Factor Conditions

### *Quality, Reliability, Specialization*

There is a long history of specialization in electronics, dating from Moldova's role in the Soviet defense system. Whether the skill sets formerly available can be applied, or are even present, is not clear. It is likely that after the fall of the Soviet Union, some of the most qualified and mobile professionals left for better opportunities in other countries, especially since many of them had been transferred to Moldova according to the aspirations of Soviet planners. Industry insiders still maintain, however, that there is a core of skilled labor in the market. Moldova also clearly does not lack a supply of higher education institutions or faculty equipped to train the workforce. Using the current industry statistic of 40,000 professionals working in the ICT sector, this represents 1.14 percent of the population.

The issue of quality is a difficult one, as there are only limited measures available in the ICT industry. Determining whether work products or services are of high quality can be a matter of subjective judgment. There is evidence that a few companies produce enough high quality goods and services to compete on international markets; these firms have demonstrated meaningful results and successes. However, using industry standard measures of quality and reliability reveal that only one company in Moldova has achieved ISO 9001 certification and none is currently using the Capability Maturity Model (CMM) certification for process management. Only a handful of companies are certified Microsoft or Oracle partners. According to the MEPO report, of the 485 professionals represented in the study, only 64 individuals held any type of industry certification. As a proxy for the industry, this percentage of certification is not particularly high.

The lack of industry certification notwithstanding, there is evidence from the MEPO study that many companies are using best practices computing platforms, programming languages, and data bases, such as Windows, Unix, Linux, C++ and Java, MS SQL Server, Informix, and Oracle.

### *Costs*

Moldovan ICT products and services compare well from a cost perspective. The very low wage rates in the industry make Moldova very competitive on the international market. According to the MEPO report, the average share of salaries in the total structure of costs for custom programming is approximately 60 percent. Operational expenses are low, around 20-

30 percent. The weighted average net salary in the industry is estimated at USD$309 per month or US$6 per hour. In some cases, the hourly wage can rise to US$8 per hour. This labor rate is one of the lowest in Eastern Europe and is highly competitive with other technology exporting economies. The table below presents a comparative analysis of hourly wages for a select group of companies:[19]

| Country | Project Manager Level Charge per hour (US$) | Software Engineer Level Charge per hour (US$) | Total Software Exports (US$) |
|---|---|---|---|
| India | 50 – 80 | 30 – 60 | 10 Billion |
| Russia | 50 – 70 | 30 – 50 | 100-200 Million[20] |
| China | 30 – 50 | 20 – 40 | 1.5 Billion |
| USA | 100 – 200 | 80 – 120 | Over 200 Billion |
| Vietnam | 20 – 30 | 15 – 25 | N/A |
| Moldova | 6 – 8 | 2 – 6 | N/A |

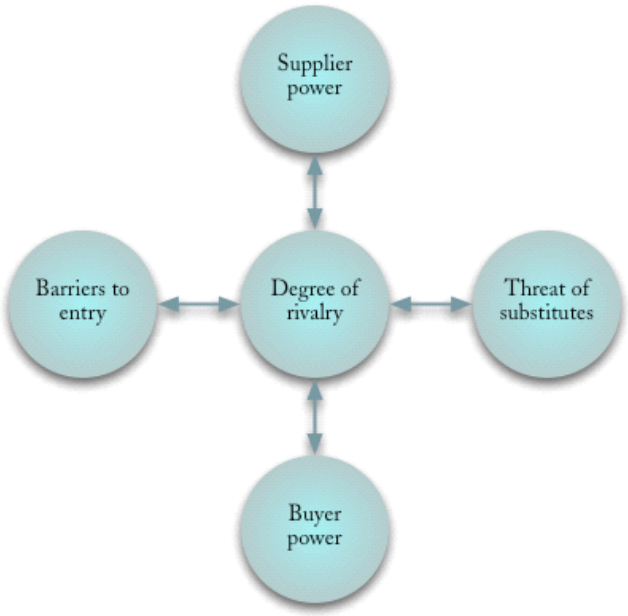
Countries with relatively high volumes of advanced factor conditions, including skilled labor, communications, and technology, generally compete well on international ICT markets, particularly if the cost of these conditions is relatively low. Industries within these countries also have an opportunity to self-select their economic and commercial priorities. Software services and ready-made products are well suited to leveraging large numbers of underemployed engineers, while ICT-enabled business services and process outsourcing is a good strategy for well-educated, nontechnical resources with adequate language abilities.

In the case of Moldova, both of these conditions exist currently, at comparatively low wages. The challenge for the sector is how to move up the value chain from piecework to fully finished products and services, to capture more of the value-added revenue.

## Problems

### *A Five-Forces Analysis*

The problems of the Moldovan ICT sector are best examined within the framework of the Porter Five Forces Model for Industry Analysis:




**Supplier power:** The issue of supplier power is an interesting one, depending on how you define the suppliers. Universities are the most obvious providers of advanced factor endowments, that is, human resources. In this case, the universities have the

[19] Source: Global Cybersoft, Inc. and World Economic Forum, 2004.
[20] Estimated for 2003; actual trade data are not available.

greatest supply of educated people, but the differentiation of supply is quite low. The professionals themselves are also suppliers of intellectual capital to the sector. While technicians are low cost, they are highly mobile, making competition for quality resources keen across the sector. Fortunately, the presence of local substitutes is robust, in the case of labor.

**Threat of substitutes:** The global demand for ICT outsourcing, ready-made products, and services is stunningly high, despite a global slowdown in ICT spending. The supply of providers is also abundant, resulting in downward pressure on prices and low switching costs for customers. Moldova is a small player in a crowded international market that includes powerful ICT exporters also able to provide high quality at low prices.

**Buyer power:** Perhaps the greatest force working on the sector is buyer power, putting Moldova at a distinct disadvantage. Buyers have enormous leverage and volume. Access to information is widespread. Lack of brand and the shadow market weaken Moldova's position. Customers are very price sensitive. For now, the buyer concentration is high because of little market access. The threat of substitutions always exists and most customers can easily backward integrate their value chain, if needed.

**Barriers to entry:** Unlike manufacturing or other capital-intensive industries, ICT has few barriers to entry. The minimum requirement for individuals or firms is a computer and knowledge. The low cost of switching, and distribution channels, for example, the Internet, makes ICT services accessible to vast numbers of competitors. Unfortunately, Moldova is also at a disadvantage here because the one barrier to entry, brand identity, is something most companies in the sector lack.

**Degree of rivalry:** The sector is diffuse, with little competition, cooperation, or concentration. Specialization and isolation contribute significantly to a lack of firm rivalry, making innovation and industry growth more difficult.

### *A Vicious Cycle*

The Moldovan ICT sector is caught in a vicious cycle of isolation and exclusion from world and domestic markets. A general lack of local and international brand awareness keeps the industry from fully developing its potential. Underdeveloped formal access to markets has kept wages low for even the most experienced and talented professionals. Consequently, these factors conspire to feed a burgeoning shadow market for software development outsourcing. Companies often find it difficult to retain talent because of low wages and unpredictable employment conditions. Often, when young talent is trained and certified, they leave for better jobs in Western Europe or the U.S., or they enter the shadow market for the promise of slightly higher compensation.

Widespread prosperity is elusive because of extremely low foreign investment in the industry and relatively small contracts, gained either through partner companies in other markets or personal relationships with Moldovans living in other countries. While there are some promising signs from these company linkages, the reality is that the foreign partner normally

takes most of the value-added revenue from contracts, leaving their Moldovan counterparts with minimal compensation.

The result is that very few companies are able to break out and establish themselves as players on the international market; rather, they remain locked in a battle of low wages, low brand recognition, low investment, and low value added. The long-term effect of this cycle will be stagnation in the industry through deskilling, further marginalization of companies, and the inability to keep pace with changing global technology demands.

A stagnant domestic economy that does not currently drive enough demand for local ICT goods and services, and a government that is negligent on issues concerning policy, regulation, and enabling environment, further compound the problem. Although the government has taken significant steps to encourage increased reliance on information technology, and has proposed laws on digital documents and signatures, more must be done. The core of the country-level problem is the lack of clear and consistent policies towards business development. This policy deficit is reflected in a number of ways including:

- A tax structure that is not harmonized with neighboring competing countries or target markets;
- A State monopoly in all ICT-related projects for the government;
- No preferential procurement policies for Moldovan companies;
- Cumbersome and often capricious licensing and registration procedures;
- An overly inefficient bureaucracy.

### *SWOT Analysis*

The thorough study of problems and the potential solution strategies related to the ICT industry in Moldova can be best summarized by an expanded analysis of strengths, weaknesses, opportunities, and threats (SWOT) originally presented in the MEPO study, carried out for BIZPRO.

| Strengths | Weaknesses |
|---|---|
| 1. There is a high level of IT education and permanent young specialist inflow into the sector.<br>2. The country has a history of technical expertise in engineering and electronics dating back to the USSR defense system.<br>3. There is a large population of multilingual professionals in English, Russian, and Romanian.<br>4. Many professionals have personal strong ties to Russian and European markets.<br>5. Low wages and a highly skilled workforce give Moldova a comparative advantage.<br>6. There is broad knowledge and awareness of modern programming languages, platforms, data bases, methodologies, and quality standards. | 1. Too few companies have industry standard quality certifications.<br>2. There is no domestic and international awareness or brand for ICT industry.<br>3. There is no domestic demand for ICT products and services.<br>4. The shadow and black market undermines open businesses and marginalizes firms and professionals.<br>5. There is a lack of project management knowledge and skills.<br>6. There is no clearly defined government ICT sector development strategy or policy framework.<br>7. Entrepreneurial skills, including sales, marketing, and business management, are lacking.<br>8. State authorities have low professional knowledge about ICT.<br>9. There are difficulties in quality management.<br>10. Employment stability is uncertain.<br>11. There is a lack of investment capital and access to credit at reasonable terms.<br>12. There is little or no industry organization, cooperation, or collaboration. |
| **Opportunities** | **Threats** |
| 1. WTO accession will drive reform across all sectors of the Moldovan economy.<br>2. There is a strong global demand for low cost ICT development and offshore business process outsourcing— market growing at 15% per year.<br>3. There is continuing global recovery in ICT investment and consumption.<br>4. There is continued growth in demand for Internet and Web related products and services.<br>5. There has been a recent demonopolization of Moldovan telecommunications industry.<br>6. There is recovery and eventual growth of the local economy.<br>7. There is an untapped potential in the local economy because of lack of awareness of ICT benefits.<br>8. Super-regional organizations and donors focus heavily on ICT as a foundation for global economic development.<br>9. ICT demands are becoming more complex, favoring higher skill levels and analytical abilities.<br>10. Government has a new policy in support of information technology and e-government. | 1. ICT-related legislation has imperfections and unpredictability.<br>2. Laws and policies are inconsistently applied and enforced.<br>3. There is a State ICT Department monopoly on virtually all government contracts for ICT.<br>4. The tax structure is overly burdensome and inconsistent with markets and competitor countries.<br>5. There is deskilling and emigration of the local talent pool out of Moldova.<br>6. There is a rapidly growing market in China and Eastern Europe for demand and supply of ICT products and services.<br>7. There are growing and more organized ICT industries in Russia, Ukraine, Romania, and Hungary.<br>8. There is a shift away from low cost to high value- added ICT products and services.<br>9. Political instability and conflict may occur.<br>10. Other ICT exporting countries may undercut Moldovan companies on price and quality.<br>11. There is a growing EU community, with Moldova on the outside. |

### *The Shadow Market*

The largest impediment to growth in the ICT sector is the huge shadow and black markets, with two significant impacts on the ICT industry. First, the market creates a disincentive for companies in Moldova to produce software for local consumption. The low cost of pirated software drives the price of products so far down that Moldovan companies are not able to recover their development costs or to make a profit. Second, and perhaps more important, the black and shadow market is a major deterrent to FDI.

Evasion of taxes is a possible factor for the shadow market. Other factors may include protection of intellectual property, overly cumbersome government bureaucracy, or lack of real legitimacy from the perspective of western companies. While some firms indicate a strong desire to operate transparently, to have access to larger contracts, this view cannot be confirmed. Operating in the formal economy will subject companies to higher taxes, customs duties, higher labor costs, and regulations.

Regardless of the real reasons that companies operate in the shadow market, or whether or not there is a real desire to legitimize activities, the effect the shadow market has on the prosperity of the industry includes:

- Exposure to exploitation by their foreign customers;
- Lack of legal recourse in cases where a dispute arises;
- No claim to intellectual property rights or future value of products produced;
- Downward pressure on wages;
- No retention or propagation of knowledge, as companies emerge and disappear rapidly.

The probability is quite low that the efforts of BIZPRO will draw all companies out of the shadow market. For those firms expressing an interest in operating openly, there are numerous opportunities to help these firms avoid and overcome the effects mentioned above.

## Response

The overall strategic objective is to increase the competitiveness of the Moldovan ICT industry. Achievement of this objective will do much to stimulate economic growth and prosperity in the country, as ICT penetrates and directly affects the competitiveness of other parts of the economy. A strong, efficient, and competitive ICT sector benefits all industries and citizens by contributing to productivity, growth of a vibrant middle class, open access to information, and expansion of knowledge.

The situation is tenuous for Moldova because the further its economy falls behind the technology curve, the more difficult and costly it becomes to catch up to the rest of the world. Moldova is in the middle of a dynamic market which is rapidly changing and threatening. Only by breaking the cycle of low market access, low investment, low competition, and low collaboration can the ICT sector move to a position of prosperity.

The vision is to transform the industry from the vicious cycle to a virtuous circle of increased awareness and availability of ICT products and services, greater competition and cooperation through sector development activities, and


**The Virtuous Circle**

improved market access through branding and linkages with potential customers and partners.

Transformation of the industry can be achieved through work in four key areas:

**1. Government regulatory reform and commitment to industry promotion**

A key factor for the growth of a stable and vibrant ICT sector is the creation of an enabling environment that allows ICT firms to flourish, develop, and increase their markets. Among these are regulatory reform in the areas of taxation, registration, and standards. Positive change in these areas can take place at the national and sector level, to drive the growth of ICT.

**Result—Eliminate constraints to enterprise growth in the business environment:**

- Identify cluster-based policies to promote the ICT industry and prepare position papers.
- Provide technical assistance to various national and local government entities charged with developing policy and regulation.
- Ensure effective advocacy by business and professional associations and their members.
- Work with government to allocate financial resources to initiatives such as Information Society, e-Government, and preferential procurement from Moldovan companies.

**2. Society and association creation and cluster strengthening**

Informal groups and professional societies are an excellent first step in association development. As such, this strategy can be approached through (a)enhancement of cluster concepts, by organizing the industry around a set of objectives that focus on communication and collaboration; (b) development of export and domestic markets; (c) standards and accreditation information; and (c) benefits from WTO accession.

**Result — Increase presence, awareness, participation and value of organizations:**

- Organize informal groups such as the Internet Society, virtual forums, and an ICT Cluster to further develop sources of services and information for dissemination and learning.
- Train associations in effective marketing and promote awareness of the value of societies, clusters, and associations and to work as advocates not lobbyists.
- Conduct strategic management workshop for cluster and associations to ensure their ability to further conduct such activity to other groups and firms.
- Engage standards organizations to collaborate with societies and associations.
- Assemble, disseminate, and train on best practices from ICT clusters and associations in the U.S., Ireland, India, Israel, and Russia.
- Facilitate cluster and association attendance at international trade exhibitions, conferences, and trade missions, to promote the ICT sector companies.

**3. Increasing quality and credibility throughout the ICT industry**

A broad based reputation for quality and reliability is a major contributing factor for competitiveness. Companies, programmers, and managers will benefit from adhering to

industry standards and will increase their credibility with customers if they demonstrate internationally recognized certifications. Business skills are also a critical need for companies to operate internationally. The sector must become current with the latest accepted practices in general business, project management, and marketing.

**Result—Increase proliferation of quality standards and business skills:**

- Launch cluster and association initiatives to procure ISO 9001 and CMM industry certifications.
- Introduce consulting/mentoring program to train consultants on project management and marketing.
- Cultivate business linkages with international marketing firms, associations, and governments.
- Conduct competitive benchmarking with successful ICT exporting countries from similar backgrounds such as Romania, Russia, Hungary, or Ireland.
- Develop centers of excellence through partnership between universities and companies.
- Launch an ICT Diffusion Initiative to measure the level of ICT penetration and impact, and design activities to increase the use and demand for ICT in other Moldovan industries.
- Develop communications and media campaign to promote ICT domestically, and Moldovan ICT industry internationally.

### 4. Increasing international market access

The greatest impetus for growth in the sector can come from promoting investment from multinational firms in Moldova, from increasing the number of foreign firms with which Moldovan ICT firms legitimately do business, from promoting the benefits of the ICT sector, and by doing business with Moldova to foreign markets, buyers, and investors.

**Result—Improve and strengthen foreign business linkages:**

- Attend and participate in trade exhibitions, conferences, and trade missions.
- Promote membership of association and companies in international industry organizations.
- Establish business linkages with international corporations, educational institutions, economic development councils, and investor communities.

# THE TEXTILES AND APPAREL CLUSTER

## Introduction

The structure of the Moldovan textile and apparel cluster in many respects exemplifies the notion of the "two Moldovas," as the country's economy passes through a long transition. The larger companies are shells of the Soviet-era behemoths, built to meet the needs of the USSR as a whole. The collapse of the Soviet Union all but annihilated their markets and severed their economic linkages. Constantly teetering on the brink of bankruptcy, they often survive only by gearing up for production when orders come in, and closing down once the production run is completed. That business model shifts much of the risk to the workers, who continue to depend on these temporary jobs, given the overall economic situation that offers few alternatives.

However, the restructuring of the sector has created a number of medium-sized companies, often in the form of joint ventures with partners from EU countries. The owners and managers of these enterprises are adapting to evolving market architectures, taking steps to upgrade their activities beyond pure processing services. With these growing capabilities, Moldova's apparel sector shows competitive potential; yet structural problems may block the realization of that potential.

In 2003, Moldova exported some US$167.6 million of textiles and apparel; textiles accounted for US$38.4 million of the total, and apparel for the remaining US$129.2 million. Roughly 70 percent of apparel exports go to the EU, and the U.S. accounts for almost all of the remainder. For textiles, the EU's share in total exports is about 60 percent, with much of the remainder going to Russia and other CIS countries. Textile exports to the EU were made up of primarily household items, such as bed linens, almost exclusively produced in Transnistria.[21] Apparel exports are mostly CM (cut and make) processing or tolling, services for foreign partners; current estimates put the local value-added in total exports at around 35 percent. However, several firms have upgraded to include design, and to move into private-label production.[22]

[21] The self-declared Transnistrian Moldavian Republic (TMR) is not recognized by the international community, but is not under the control of the Moldovan government. It is effectively a self-governing entity, with its own legal system, infrastructure, banking and monetary system, and external trade development. However, in international trade statistics, Transnistria is treated as part of Moldova. Transnistrian exporters present Moldovan certificates of origin. The analysis here does not examine these exports, although they would of course be of interest in the case of a political solution.

[22] There are some questions about the extent and direction of upgrading: the study conducted as part of the World Banks' Trade Diagnostic Study (2004) found no private-label activities, but the BIZPRO team visited several factories that were engaged in private-label production for the French, Italian, and Russian markets.

## Competing in the Global Apparel Industry

The apparel industry is operating globally. It has been regulated by international agreement, originally under the Multifibre Arrangement (MFA, 1974-1994), and subsequently, from 1995 onward, by the transitional WTO Agreement on Textiles and Clothing (ATC), which expires on December 31, 2004. The MFA provided the framework for bilateral negotiations to establish textile and clothing quotas, in large part to protect the industry in the importing country against damages from so-called uncontrolled surges in imports. The ATC sought to facilitate the progressive integration of textile and clothing products into General Agreement on Tariffs and Trade (GATT) 1994 rules, and to phase out all quotas gradually, up to their complete elimination by January 1, 2005.

The effects of the looming demise of all quotas are the subject of much analysis and spirited debate. The impact is likely to vary by market segment. For the more commoditized, less fashion-sensitive segments, economies of scale matter. For these products, the elimination of quotas favors increased concentration among the large producers, such as China or Bangladesh, although buyers will maintain some diversification to curtail risk. For fashion items, flexibility, quality, and speed to market are likely to emerge (or remain) as key factors. With respect to apparel production or processing, a recent study by the U.S. International Trade Commission identified six major factors of competitiveness, shown in Table 1.

**Table 1: Textiles and apparel: Factors of competitiveness**

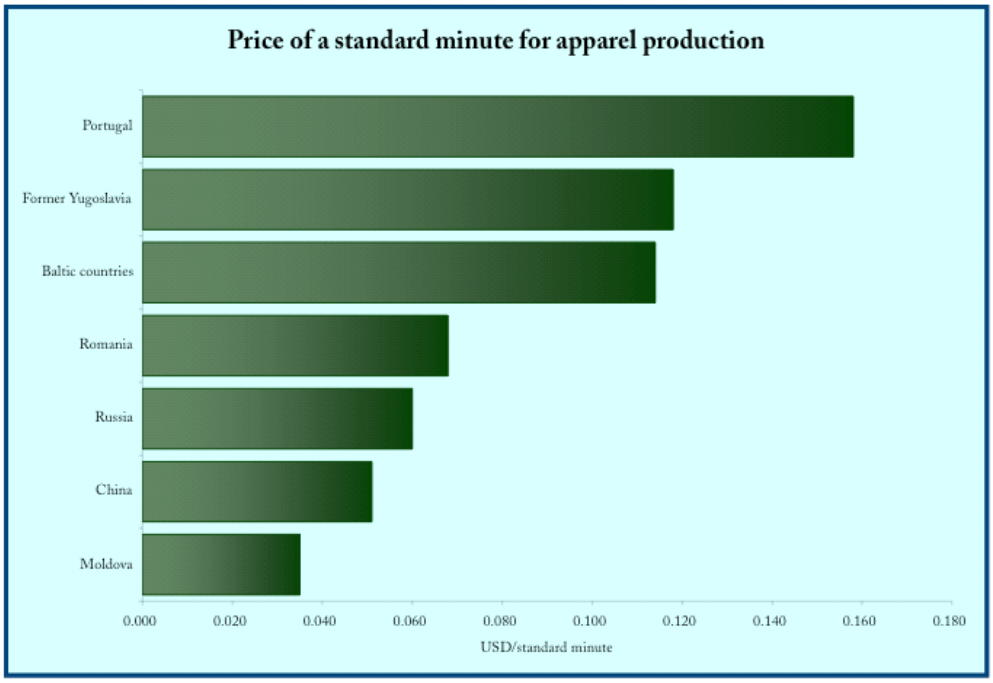
| | |
|---|---|
| ***Business climate*** | ***Labor and management*** |
| • Political stability<br>• Safety of personnel<br>• Security of production and shipping<br>• Transparent and predictable legal, commercial, and regulatory system<br>• Minimal administrative burden and corruption<br>• Compliance with internationally recognized health and labor standards<br>• Subsidies and tax credits<br>• Free trade zones<br>• Real exchange rates<br>• Market demand and economic growth | • Availability of workers and competition for workers from other sectors<br>• Compensation rates<br>• Labor skills and productivity<br>• Availability of qualified managers, including middle management |
| ***Infrastructure and proximity to markets*** | ***Raw-material inputs*** |
| • Roads, ports, rail, and airports for moving goods into and out of the country<br>• Shipping and other transportation times and costs<br>• Proximity to major markets<br>• Access to reliable sources of energy, water, and telecommunications | • Access to quality and cost-competitive domestic or regional yarn and fabric production<br>• Tariffs on imports of raw materials<br>• Rules of origin for trade preferences<br>• Cost and availability of capital to invest in new machinery and purchase raw materials |
| ***Market access*** | ***Level of service provided and reliability of supplier*** |
| • Preferential access in major markets | • Reputation for quality and on-time delivery<br>• Existing business networks (supply chain linkages, relationship with customers)<br>• Level of service provided (for example, full-package versus assembly)<br>• Flexibility and variety in styles or products and lot sizes offered<br>• Lead time and flexibility respond to quick turnaround orders |

Source: U.S. International Trade Commission

Moldova would appear to have a competitive advantage on three dimensions, with workers in effect paying the price for the first two. First, because of excess capacity and low labor costs, Moldova's apparel industry offers an attractive combination of productivity and cost. One method used in the apparel industry is to standardize the value of different pieces of apparel in terms of the time required for production. As a recent study conducted under the auspices of the World Bank's Moldova Trade Diagnostic Study puts it: "International buyers normally know exactly how many standard minutes their products contain."[23] Applying these standard minutes to the labor costs makes it possible to adjust for productivity differences. On that score, Moldova's apparel industry outperforms its key competitors, including China. Figure 14 shows a comparison of the cost per standard minute in the apparel industry for selected countries.

[23] Heiki Mattila, *Case study: Textiles and apparel, Moldova Trade Diagnostic Study*, November 2003; p. 11.

**Figure 14: Cost per standard minute in the apparel industry**




Source: Mattila, ibid.

Moldova's second advantage derives from the persistence of excess capacity, and the lack of alternative employment opportunities that allow for quick responses to incoming orders. Laid-off workers can be recalled on short notice to fulfill a particular order.

Third, Moldova's geographic location between East and West confers a potential advantage of speed to market. As its neighbors to the west are becoming integrated into the European Union, buyers there are looking further east, but are still seeking to retain geographic proximity. The potential speed to market may in fact favor Moldova when quotas are phased out completely by January 1, 2005.

## Cluster Composition

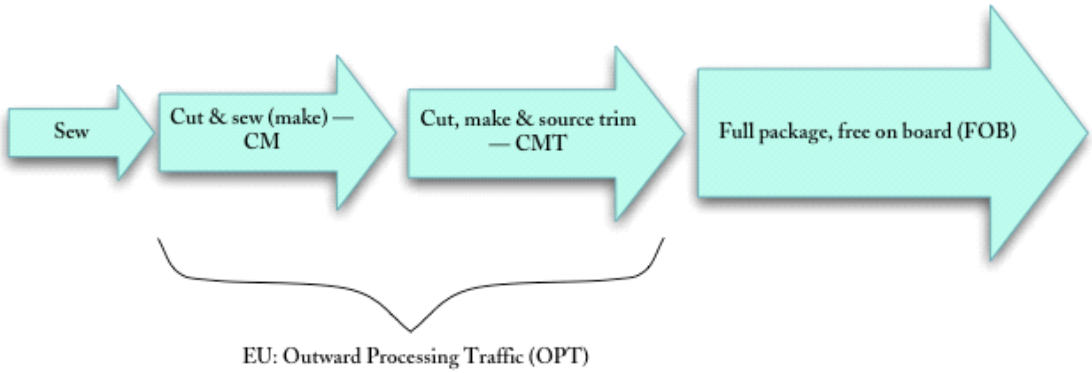
Some 50 enterprises are active in the apparel and textiles sector, 18 large and medium-sized, typically joint-stock enterprises, and the remainder small, privately-owned enterprises. Most of the factories are located in the northern and central parts of the country, particularly in the larger cities—Chisinau, Soroca, Balti, or Cahul.

According to official statistics, the sector employed some 16,000 workers in 2001, with about half each in textiles and apparel. The three largest firms in apparel employed over half of the total (4,225) for that group. However, the term *employment* is a little misleading, since the total is not corrected for time actually worked. Plants tend to operate in response to orders received, and close down for stretches at a time when the order flow is disrupted. As a result

of just counting workers, no matter how much they worked, estimates of the level of annual sales per worker cannot be compared to other countries.

The cost per standard minute shown in Figure 14 suggests that Moldova's value added per unit of labor (time worked) compares reasonably well with that for competitors. Value added in the apparel industry is almost exclusively labor, since the majority of firms is limited to the cut and sew stage of apparel manufacturing, as illustrated in Figure 15, which depicts the standard upgrading path. For processing services to the EU, Moldovan apparel manufacturers take advantage of the EU's *Outward Processing Traffic* (OPT) arrangement. OPT includes the duty-free importation of all materials and inputs, and the imposition of duty only on the value-added portion upon re-export to the EU.

**Figure 15: Stages of development in apparel manufacturing**




Source: USITC (United States International Trade Commission)

There is no Moldovan manufacturer engaging in Cut, make and source trim (CMT), because there are no suppliers of accessories like sewing thread or buttons in Moldova. However, some manufacturers have taken steps to add value by moving to private-label production: the manufacturer designs collections jointly with the EU customer (or the buyer chooses among proposed collections) and the manufacturer delivers the products under the customer's trademark. Even in these cases, however, all inputs are sourced in the EU, typically by the joint venture partner.

## Firm Structure and Rivalry

### *Degree of Competition and Cooperation*

Given the prevailing operating mode in the apparel industry, there is little competition among the major players; nor is there much cooperation in addressing common problems and issues. The cluster participants active in markets for carpets and home fabrics appear to be working largely independently. There is some limited competition in the market for raw materials (wool), but it appears to be more on an ad hoc basis.

Smaller producers targeting the domestic market are competing directly with low-priced imports, both official and contraband. Materials and inputs for domestic production are sourced abroad.

### *Innovative Capacity and Productivity*

There are some signs of innovative capacity in the Moldovan apparel industry. As noted, several manufacturers have moved to private-label production, with backward integration for the design function. For the larger factories in the apparel sector, however, upgrading has not necessarily been the main focus. The excess capacity in the apparel processing sector, together with the lingering effects of the destruction of traditional value chains, means few incentives for investment or innovation for the majority of enterprises, limiting activity to cut and sew (CM) services to buyers and retailers in the EU and the U.S. Especially for the larger enterprises, the Moldovan portion of the respective value chains is shallow and in effect captures only the immediate labor-related value added.

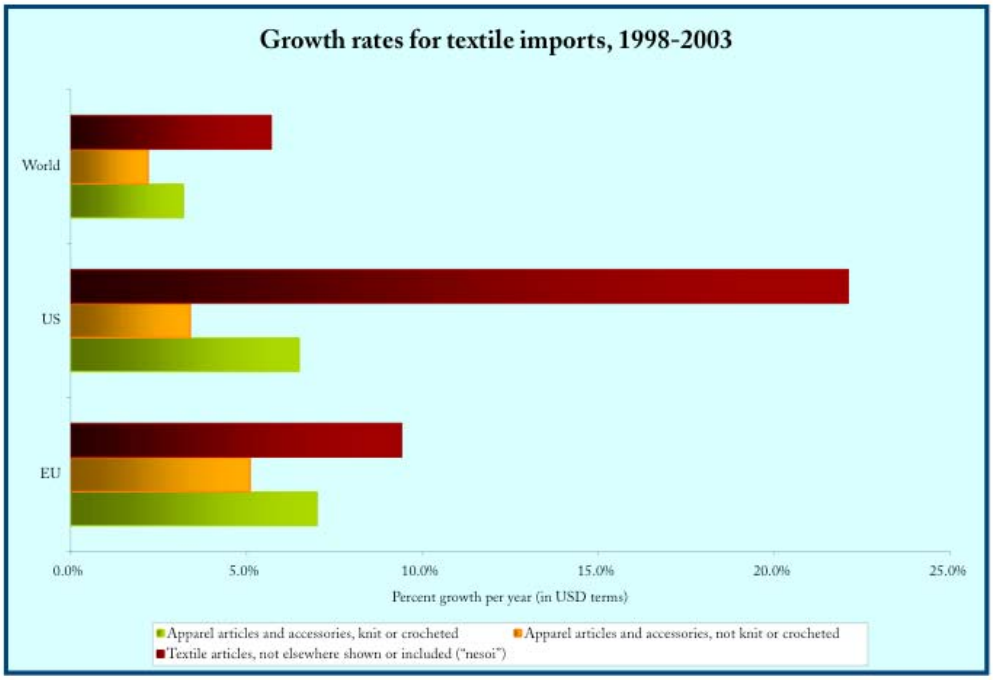
Even so, some parts of the textiles and apparel group exhibit healthy signs of innovative capacity, focusing on the needs and expectations of the market, and seeking to meet competitive design, quality, and price standards. These parts include both carpet manufacturing and the production of cotton bed linens for the EU market, the latter located mostly in Transnistria. Carpet manufacturers use wool, sourced domestically, as well as synthetics to manufacture for the domestic markets and exports to Russia (US$4.6 million in 2003).

## Demand Conditions

Overall, the capacity of the cluster greatly exceeds the size of Moldova's domestic market. In fact, the domestic market is of little interest to Moldovan apparel producers, largely because of the lack of organized retailing. There are several small operations that are focusing on domestic markets, using their own shops and market outlets for reaching consumers. Available statistics indicated that clothing accounted for 7 percent of total consumption in 2001, which is actually on the low side for a poor country. Still, the domestic demand for textiles and clothing has been estimated to grow at 0.3 to 0.4 percent per year. That demand is satisfied largely by small-scale domestic production and imports, both official and informal. The major apparel producers or processors do not appear interested in serving the local market.

Over the period 1999-2002, world imports[24] in the two principal apparel categories, defined under the Harmonized System (HS) for customs data, increased in value terms, as measured in U.S. dollars. Figure 16 illustrates major market trends for apparel, and for nonapparel textile articles, for the world as a whole (which includes of course several of the major apparel and textile-exporting countries), and for the EU and the U.S. Major markets are far from saturated, with the highest growth rates being for "other" textile articles, which include, in particular, household textiles—bed, bath, and kitchen linens. For the U.S., this market has effectively doubled over that period, from US$3.5 billion in 1998 to US$6.7 billion in 2003.

**Figure 16: Major market trends for apparel and textile articles**




Note: Growth rates for world for 1999-2002, for EU and U.S. 1998-2003.

Within those broad import market segments, individual product groups, as defined by 4- or 6-digit HS categories, show different growth patterns. As the data reported in Table 2 indicate, the majority of the EU submarkets in HS categories 61-63 in which Moldovan exporters have a significant presence (that is, with 2003 exports exceeding US$300,000), has been growing, made up of both the rising and shooting stars. The fact that Moldova's exporters (processors) have been able to capture a larger market share for a significant portion of those growing markets bodes well for the future. These are, of course, not necessarily fully competitive markets. But increasing market shares imply relative satisfaction of buyers and retailers in

[24] All references to trade statistics refer to the Global Trade Atlas, a comprehensive proprietary trade data base of official merchandise trade statistics from some 50 reporting countries, including all of the major economies, maintained by Global Trade Information Services (GTIS; www.gtis.com). The data base provides up-to-date information as soon as the reports become available. However, summing across major commodity groups defined under the Harmonized System of customs data is limited to years for which data for all reporting are available. Thus, while we have data for 2003 and even into 2004 for major trading countries, the analysis by major commodity group for the world is (for now) constrained to data through 2002.

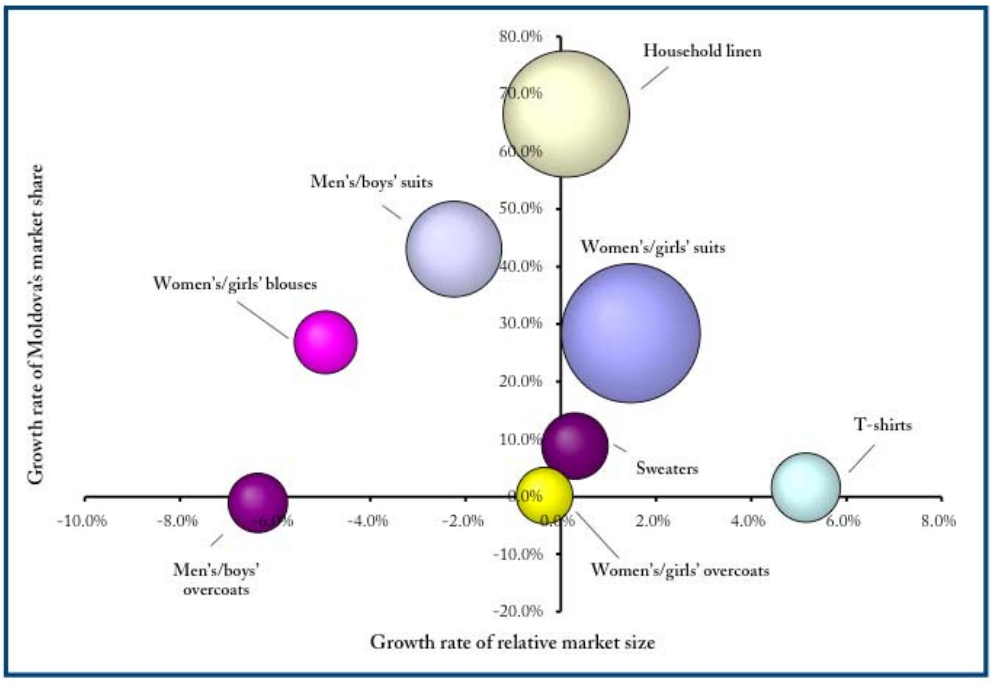
the EU countries which are engaging firms in Eastern Europe and the CIS in tolling operations, especially as the EU expansion is pushing the reach of these operations eastward. Importantly, though, Moldova's apparel producers have been gaining market shares in recently (2001-2003) growing EU markets, as illustrated in Table 2. These product categories account for US$73.2 million of apparel and textiles exports, or just about US$50 million without the bed linen (HS 6302) produced in Transnistria. For another US$32 million, Moldova's apparel producers have been losing market in growing EU markets.

**Table 2: Moldova apparel and textiles exports to the EU**

| | | Growth rate of imports | Growth rate of Moldova market share | 2003 exports in USD million |
|---|---|---|---|---|
| **Rising stars** | | | | |
| 6204 | Womens' or girls' suits, ensembles, etc., not knit or crocheted | 1.5% | 28.4% | 27.8 |
| 6302 | Bed linen, table linen, toilet linen & kitchen linen | 0.1% | 66.5% | 23.0 |
| 6109 | T-shirts, singlets, tank tops, etc., knit or crocheted | 5.2% | 1.6% | 6.9 |
| 6110 | Sweaters, pullovers, vests, etc., knit or crocheted | 0.3% | 8.8% | 6.4 |
| 6111 | Babies' garments & accessories, knit or crocheted | 0.7% | 99.4% | 1.9 |
| 6209 | Babies' garments & accessories, not knit or crocheted | 0.7% | 10.2% | 1.7 |
| 6108 | Women's or girls' slips, pajamas, etc. knit or crocheted | 0.1% | 30.1% | 1.1 |
| 6107 | Men's or boys' underpants, pajamas, etc., knit or crocheted | 8.6% | 170.7% | 0.3 |
| | **Total** | | | **69.8** |
| **Declining stars** | | | | |
| 6203 | Men's or boys' suits, ensembles, etc., not knit or crocheted | -2.2% | 43.0% | 13.1 |
| 6206 | Women's or girls' blouses & shirts, not knit or crocheted | -4.9% | 26.8% | 5.7 |
| 6202 | Women's or girls' overcoats, etc., not knit or crocheted | -0.3% | 0.2% | 4.6 |
| 6211 | Track suits, ski suits and swimwear | -1.6% | 31.0% | 3.8 |
| 6105 | Men's or boys' shirts, knit or crocheted | -11.7% | 22.4% | 3.2 |
| 6104 | Women's or girls' suits, ensembles, etc., knit or crocheted | -4.6% | 22.3% | 1.7 |
| 6103 | Men's or boys' suits, ensembles, etc., knit or crocheted | -0.5% | 39.1% | 1.0 |
| | **Total** | | | **33.2** |
| **Dark stars** | | | | |
| 6201 | Men's or boys' overcoats, raincoats | -6.4% | -1.1% | 5.1 |
| 5208 | Woven cotton fabrics, nu 85% cotton, wt. Nov 200g/m2 | -7.7% | -32.4% | 1.6 |
| 6205 | Men's or boys' shirts, not knit or crocheted | -5.5% | -1.2% | 1.1 |
| | **Total** | | | **7.8** |

Figure 17 offers a visual summary of Table 2, again at the 4-digit HS level. It shows clearly that Moldova is strongly positioned in growing submarkets. Where it is losing market share is in the categories that account for a smaller portion of total apparel exports; one of these categories, track suits and other sports apparel, has actually been growing, but at a slower rate than the respective market expansion.

**Figure 17: Apparel and textile exports to the EU**




## Related and Supporting Industries (Complementors)

The discussion has already touched on some of the issues regarding complementors for the textiles and apparel cluster. Moldovan apparel producers are in effect forced to bypass the CMT stage, where they become responsible for sourcing trim, because there are no domestic producers of such things as buttons, threads. Given the OPT arrangements with EU buyers, which favor that all materials needed are imported on a temporary basis, domestic producers would face considerable difficulties breaking into this market, in any case. Some of the carpet manufacturers are in fact sourcing wool from domestic producers, which makes them (an albeit small) part of the hides and skins (and meat) value chain.

Weaknesses in the transport services sector, especially trucking, have led a number of apparel producers to acquire and operate their own trucks. This pattern is a symptom of critical bottlenecks in the value chain for a key export article. Normally, the skills required to operate a competitive apparel or textile operation are quite different from those for transport services providers. If apparel manufacturers find that they can operate the needed services at a lower cost or with higher quality or reliability, there is a clear issue of either incentives or capacity, or both. While this assessment did not study the road transport sector in any detail, one of the barriers to its modernization is the lack of appropriate financial instruments or services, such as leasing.

## Policy Aspects

As in other sectors, and well documented in the *Cost of doing business in Moldova* survey, policies and administrative practices add to the cost of production. These additional costs are reportedly significantly higher than in competitor countries. The apparel sector case study under the recent World Bank Trade Diagnostic Study identified the following policy-related cost items:

- Delayed VAT reimbursement;
- VAT payable on cutting waste (which can account for as much as 25 percent of imported materials);
- Additional personnel costs to handle bureaucracy;
- Customs charges;
- Chamber of Commerce charges, for such items as Certificates of Origin, export licenses, and the like.

The study estimated that these policy-related costs add over 20 percent of the value added to the *free on board* (FOB) price of garments produced in Moldova. Bureaucratic hurdles and delays in customs clearance may also negate the locational advantage that would enable Moldova to build on its low labor cost advantage. By adding to the time its takes to ship to the EU, these factors impair competitiveness.

Moreover, the current policy environment makes it more difficult for producers in the higher value-added segments in the industry. For example, since it is mostly small and medium-sized enterprises that have been moving into higher value-added production, delays in reimbursements become more important. Thus, policy provisions are making it more attractive for producers to remain in the CM end of the business. Unfortunately, that is also the segment most vulnerable to switching by lowest-cost-seeking buyers. It is also the segment least equipped to serve Moldova's other markets to the east (already playing a critical role for some segments, such as carpet manufacturing), which require full-package service.

## Conclusion

Moldova's producers, typically with foreign partners, have shown that they can leverage the country's advantages in low-cost, high-productivity labor and a favorable location to the market. At the same time, some larger producers remain stuck in the low value-added segment of the cluster, limiting themselves to CM operations. Moldova could serve as an exporting platform to both the West and East, but this transformation will require significant changes in the business environment—to create greater incentives to move up the value-added ladder than penalties for innovative activity.

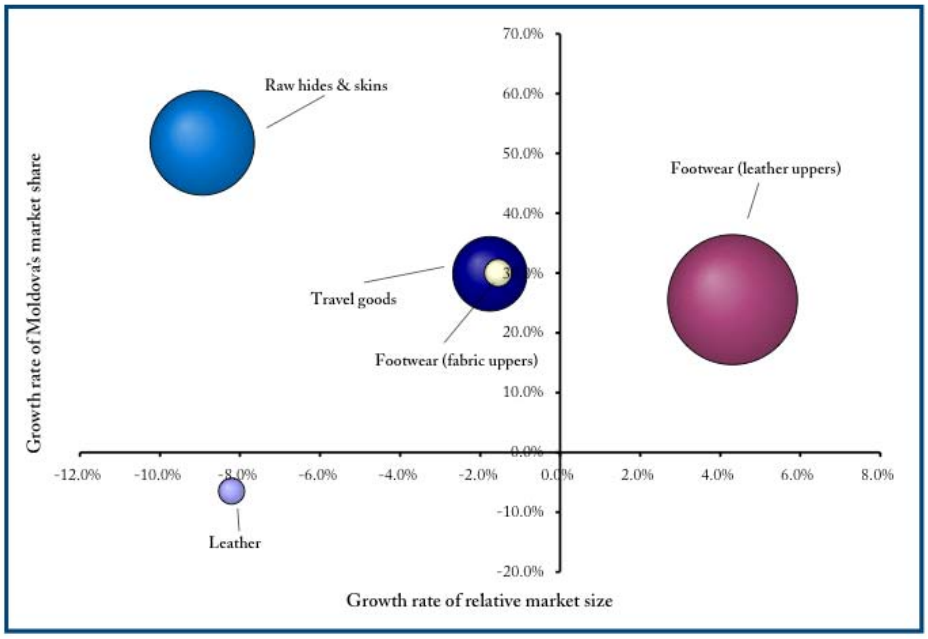
# HIDES, LEATHER, AND LEATHER GOODS

## Introduction

Taken together, raw hides, skins, leather, footwear,r and leather goods form an important part of Moldova's export economy. In 2003, total exports from this cluster to the EU exceeded US$57 million, although that figure includes re-exports of imported materials and inputs for shoe production. In addition, there are continuing exports to Russia, as well as some significant forays into the U.S. market.

For the EU market, most of the exports from this cluster have been gaining market share, but only one in a growing market, as illustrated in Figure 18 (which includes footwear with nonleather uppers, because these items are likely to share production facilities). In leather, exports of which amounted to less than US$1.2 million in 2003, Moldova has been losing market share in a (relatively) shrinking market.

**Figure 18: Leather cluster exports to the EU, 1999-2003**




Moldova has been capturing market share at a high rate for raw hides and skins. The exports of raw hides and skins, typically only minimally processed (preserved), have on average increased by 55 percent every year between 1999 and 2003. While the market has been declining in the EU, world demand for raw hides and skins (as well as finished leather) remains strong, driven in part by the growing preferences for leather upholstery in automobiles. A good portion of the hides and skins exported to the EU are coming in from Ukraine.

## Composition of the Cluster

### *Overview*

The hides and leather cluster is composed of virtually all the core elements—livestock, slaughterhouses, processing/preserving raw hides and skins, tanning (both with and without hair), shoe production, and production of other leather goods. The structure of the cluster is characterized by the coexistence of several value chains that show stronger linkages with foreign than with domestic partners.

**Figure 19: The Moldova leather cluster**

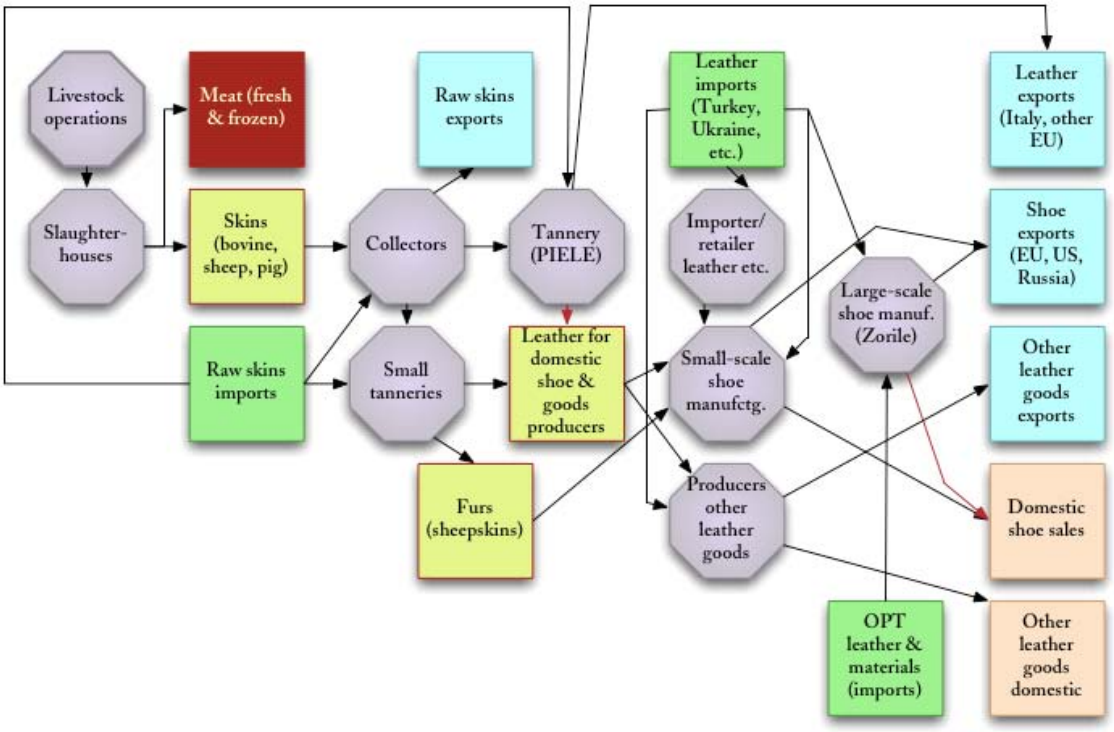



Figure 19 illustrates the structure of the cluster. The octagonal elements represent production units, while the square boxes designate commodity flows, including imports, intermediate goods, exports, and domestic sales. The central elements of the cluster are the collectors, reportedly about 20 to 30 companies, who act as intermediaries and shape market architecture. They collect skins from small producers, slaughterhouses (which also sell directly to the tannery), and from exporters elsewhere, primarily in Ukraine. The major portion of the raw hides and skins is exported, primarily to the EU. With respect to re-exports of materials from Ukraine, Moldova is again benefiting from preferential access. In dealing with domestic producers, the collectors are paying on the basis of quality (four levels).

### *Tanning*

Some of the domestic skins produced by the slaughterhouses are sold directly to the single major tannery, *Piele*, an Italian-Moldovan joint venture, with the Italian partner holding 80 percent of the equity. The tannery also sources raw materials from the collectors and from

outside the country, primarily Ukraine. Using equipment installed in 1991 and upgraded since, the *Piele* tannery started with wet blue production, but has since graduated to producing leather meeting European quality standards. In 2003, total leather exports to the EU were valued at US$1.1 million, with the Moldovan producer actually gaining market share in a growing market. The Italian partner handles all distribution in the EU, but the company management plays an active role in attending trade shows and developing specialty designs.

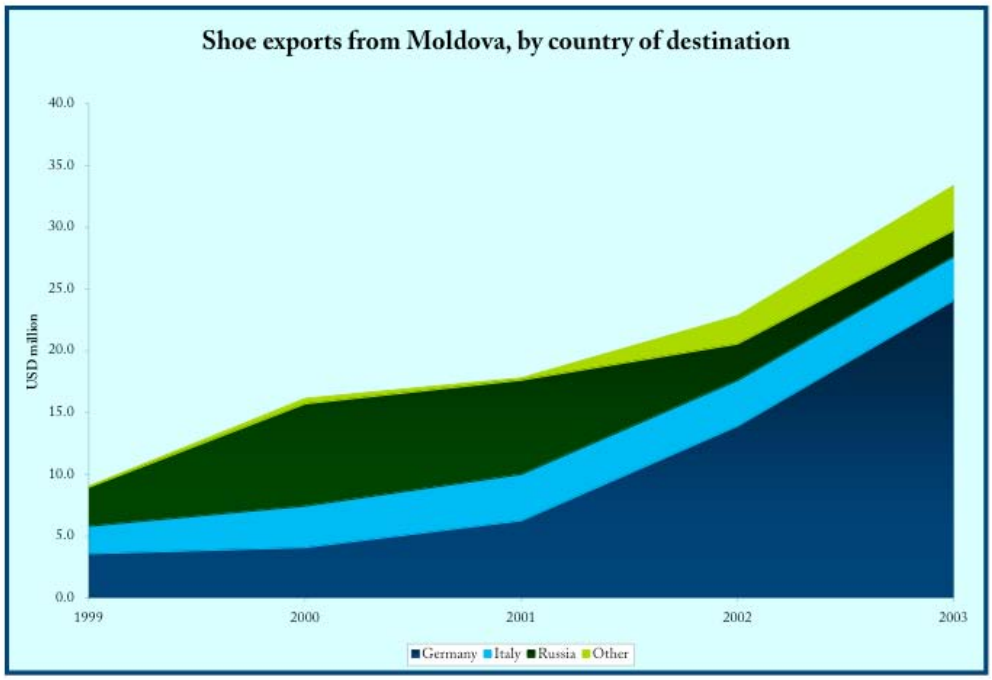
The tannery is selling some leather to local producers of shoes and other leather goods, but in small amounts, and typically of lower quality. The consensus seemed to be that these linkages were unlikely to grow stronger, because the quality of most of the leather produced exceeds requirements for local shoe manufacturing, and prices are high. There have been some deliveries of leather to producers of high-quality leather bags, as well as to automotive upholstery shops, but these transactions appear to have been largely of an experimental nature. The company currently employs some 330 people.

Local shoe producers have been sourcing their leather from foreign suppliers, located primarily in Turkey. They do some of that themselves and some of it through a store in Chisinau that is also importing and distributing other inputs. A few small tanneries have been processing sheepskins, for the manufacture of fleece-lined boots and jackets. Two of these have reportedly just installed equipment to produce smooth leather, to meet local quality standards. The equipment has been obtained from different sources, using a rollover of a one-year loan for part of the financing.

### *Shoe Production*

Shoe production and shoe exports are highly concentrated. There is one state-owned producer of shoes (*Zorile*) that accounts for virtually all of the exports to the EU (Germany and Italy), and for some of the exports elsewhere. The factory is working under contract to an Italian and a German shoe firm; the latter is *Rieker*, a major brand. Altogether, the *Zorile* company is producing roughly 1 million pairs of shoes per year; it accounts for 13 percent on average of the German firm's outsourced production. Under the Soviet system, the factory was turning out some 8 million pairs of shoes per year. Total employment is now around 1,300.

**Figure 20: Markets for Moldova's shoe exports**




The activity is limited to assembly, with all materials and inputs imported duty-free under the EU's *Outward Processing Traffic* protocol. The current arrangement reflects, in part, a learning process. Following independence, *Zorile* sought to compete in external markets on its own, only to be brought to the brink of bankruptcy; it survived solely because the lack of an effective bankruptcy system in Moldova kept it from going out of business. It is now considering the working arrangements with the European buyers as a kind of apprenticeship for learning to survive in global markets, and perhaps to move to higher value-added activities, as a new generation takes over. For now, the contracts provide steady employment for the workforce, although there remains considerable excess capacity.

Within that structure, the *Zorile* management is exploring other markets, with some success. It is sourcing leather from suppliers abroad, and is producing for markets in nearby countries. The pattern of all shoe exports is shown in Figure 20. The "other" destination is mostly the U.S., where Moldovan shoe exports reached US$2.9 million in 2003, almost one-tenth of total shoe exports.

## *Demand Conditions*

The demand for raw hides and skins is a derived demand, linked to the demand for leather in the target markets, much of that driven by demand for leather upholstery in automobiles. The market is mature and quality standards and requirements well established. It appears that Moldovan exporters (and re-exporters) of raw hides and skins understand demand requirements and market architecture, as well as the requirements for maintaining volume, as reflected in the rapid expansion of their market share

Companies producing shows for the domestic market are facing increasing competition from imports, especially from Asia. In fact, there has been a tendency to cede the market for summer shoes to imports, and to focus production on sturdier shoes for the winter.

In terms of outsourcing activities, the demand remains strong; yet Moldovan producers remain dependent on the sourcing decisions of the buyers, primarily in the EU. There has been a steady increase in the volume of orders, but as conditions shift, so may the selection of suppliers.

## Complementors

With the exception of a good portion of the raw materials, most of the upstream inputs—chemicals, shoe hardware, and the like—are imported. With smaller tanneries coming on-stream that target the domestic market for leather, some backward integration may occur.

The financial system could (and should) play a role as a major complementor, facilitating the transformation of the cluster and addressing the working capital needs. The orientation of domestic shoe producers to target seasonal (winter) demand puts heavy demands on working capital, as long as producers want to maintain year-round operation. Since the financial system lacks the wherewithal to respond to these needs, producers and suppliers tend to develop their own arrangements to survive and continue doing business. Typically, suppliers may accept not getting paid for a period of time to facilitate transactions and meet working capital requirements. In fact, most of the smaller shoe producers, like most of the small and medium-sized enterprises overall, seek ways to minimize demands on their cash flow by operating on the edge of the informal sector, even if they employ as many as 25 or 30 people. Their margins are small, and efforts to upgrade and compete more effectively are hampered by the business environment. Entrepreneurial energy is diverted to staying afloat and minimizing costs, rather than seeking ways to improve quality or move into new markets. Inadequate financial intermediation and facilitation sap much of the innovative capacity in the cluster.

## Prospects

One striking aspect of the structure of the leather cluster is the effective lack of integration. The structure of the sector is characterized more by vertical relationships with the companies' foreign partners than by linkages among the cluster elements. For example, virtually all of the leather produced by the tannery is exported. Shoe producers aiming at the local market—including *Zorile*—source their leather from Turkey, since there are no other tanneries in Moldova that produce leather suitable for shoes (although two small ones are reportedly coming on line). There is a small operation in Chisinau that imports and distributes other materials needed in shoe production, including some leather. The exporters of raw hides and skins get their merchandise from local sources, as well as from Ukraine, relying on networks dating back to Soviet times. Again, Moldova has an edge in terms of access to the EU. In turn, the local tannery sources very little in the way of its raw materials locally, relying instead more on Ukraine.