

# The Global Distribution of Trademarks: Some Stylised Facts

*Eugenia Baroncelli, Carsten Fink and  
Beata Smarzynska Javorcik*

*The World Bank*

## 1. INTRODUCTION

**T**RADEMARKS are words, signs, symbols or combinations thereof that identify goods as manufactured by a particular person or company, therefore allowing consumers to distinguish between goods originating in different sources. When such signs and symbols are applied to services, we refer to them as service marks. The trademark system is designed, *inter alia*, to protect the reputational assets of a natural person or a legal entity and, therefore, provides incentives for investments in quality of goods and services sold on the market.<sup>1</sup>

Trademarks belong to the wider family of intellectual property rights (IPRs). Businesses and individuals register trademarks in special registers created and maintained by governments. Once registered, owners of trademarks benefit from legal protection against unauthorised use by third parties.<sup>2</sup> Registration prevents the coexistence of confusingly similar trademarks and serves as proof of ownership, for example, in the case of legal disputes. While trademark laws and registers can be found in virtually every country, national regimes often differ markedly as to whether particular signs qualify as trademarks, the scope of protection,

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<sup>1</sup> Note that trademarks are not necessarily restricted to goods of *highest* quality, they are merely designed to assure consumers of *consistent* quality. For a seminal review of the economic rationale of trademark protection, see Landes and Posner (1997).

<sup>2</sup> Some national legal systems provide for the protection of trademarks by virtue of their use and without registration. However, such legal systems often offer greater protection for trademarks upon registration.

guidelines for avoiding confusing marks, registration costs, legal means available to fight infringement and other important details.<sup>3</sup>

While the commonly held view suggests that cross-border registrations of IPRs may be associated with welfare transfers from developing to industrialised countries (see, for example, McCalman, 2001), surprisingly little is known about one important component of the global IPR system, namely, the worldwide distribution of trademark registrations. Despite the availability of data on trademark applications and registrations for a large number of countries, researchers have hardly paid any attention to this subject.

This study provides the first step in filling this gap in the literature. Its purpose is to present some new stylised facts, which emerge from the analysis of a dataset put together by the authors based on the statistical information published by the World Intellectual Property Organisation (WIPO). The questions of interest include the distribution of trademarks between countries of different income levels, the share of trademark registrations accounted for by foreign residents and its variation across different income groups, the extent to which poor countries participate in the international trademark system, and the distribution of registrations across different sectors of the economy.

Understanding these issues is important for two reasons. First, they shed light on the global distribution of intellectual property ownership and thus possible welfare implications of a reform of the global IPR system. In particular, they help assess the economic implications of international agreements on trademark protection, most prominently the WTO's Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS). Second, they provide evidence on how firms from different countries use trademarks as a way of investing in reputational assets, which, in turn, is an important factor in determining competitive processes and international trading patterns.

The paper is organised as follows. Section 2 provides a brief introduction into the trademark system, the key components of trademark laws, trademark administration and enforcement, and ways in which firms can obtain protection in foreign markets. Section 3 establishes the key stylised facts that emerge from an analysis of disaggregated data on trademark registrations. The final section concludes by comparing some stylised facts for trademarks and patents and discussing potential policy implications.

## 2. THE MAIN FEATURES OF THE TRADEMARK SYSTEM

In order to receive protection for their trademarks, firms or individuals must file an application with a national intellectual property office. Upon payment of a

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<sup>3</sup> However, the legal process for registering trademarks is similar across countries.

fee, the trademark office examines whether the proposed signs, symbols or names are unique to the sectoral classes for which protection is sought and are not confusingly similar to already existing marks.<sup>4</sup> If an application meets all the relevant criteria, the trademark is officially registered for a limited time period – typically ten years. However, prior to expiration, trademark holders have the option of renewing their registration. Through continuing renewals, and absent any act or failure to act which might call the rights concerned into question, trademark registrations can virtually last forever.<sup>5</sup>

Trademark registration gives the trademark owners the exclusive right to commercially use the protected names or symbols, including licensing them to third parties. These exclusive rights are enforced by a country's judicial system. For example, in order to immediately stop infringing activities, such as the sale of counterfeit products, trademark holders can request seizures or preliminary injunctions through the court system.<sup>6</sup> And if the claim of infringement is verified by trial, courts can demand a payment to be made to the legitimate title holder.

Trademark rights are territorial in nature, in the sense that each nation protects IPRs only insofar as these rights are exercised in the domestic economy. Since trademark holders may seek to market and sell their goods and services in foreign countries, there exists scope for cooperation between governments. A simple form of cooperation consists of establishing a mechanism that facilitates the process of registering trademarks in foreign countries. Such a mechanism has emerged in the form of regional trademark offices, where firms can register trademarks at a supranational level and thus obtain simultaneous protection in a number of jurisdictions. The three most prominent examples of such regional intellectual property offices are the European Union's Office for Harmonisation in the Internal Market (OHIM), the African Intellectual Property Organisation (OAPI), and the African Regional Industrial Property Organisation (ARIPO).

Another international mechanism for registering trademarks has emerged through the conclusion of two treaties, namely the Madrid Agreement Concerning the

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<sup>4</sup> Note, however, that in the European Union and in virtually all Central and Eastern European countries, a distinction is made between so-called absolute and relative grounds for refusal of a trademark registration. Offices examine new trademark applications only with respect to absolute grounds, i.e. distinctiveness, etc., but not with respect to similarity with existing marks, which is a relative ground. Consequently, an identical or confusingly similar trademark is refused to be registered only if a holder of an earlier identical or confusingly similar mark files an opposition.

<sup>5</sup> A special case is when trademarks become part of the public domain. For example, the 'Xerox' or 'Walkman' trademarks were judged to have become part of the common vocabulary and the trademark holders were asked by certain jurisdictions – against a financial compensation – to give up their exclusive rights.

<sup>6</sup> When it is necessary to preserve the status quo prior to a trial, a court may issue a *preliminary injunction* or *temporary restraining order* ordering a party to carry out a specified activity, such as for instance, halting the production and distribution of goods infringing on exclusive trademark rights.

International Registration of Marks (Madrid Agreement of 1891) and the Protocol Relating to the Madrid Agreement Concerning the International Registration of Marks (Madrid Protocol of 1989). The so-called Madrid system substantially reduces the administrative burden and transaction costs involved in registering trademarks and maintaining them in multiple countries by allowing an applicant to file one international application and designate the countries in which protection is sought. It is administered by the World Intellectual Property Organisation headquartered in Geneva.

A deeper form of international cooperation takes the form of international agreements that provide for some form of harmonised minimum standards of trademark laws and administrative and enforcement procedures. The rationale for such agreements is to minimise conflicts that can arise if domestic IPR regulations discriminate against foreign nationals or if standards of protection are weaker abroad than they are at home.

Most prominently, the Paris Convention for the Protection of Industrial Property (Paris Convention of 1883), to which 164 countries are members, contains, among other things, substantive provisions regarding national treatment (each contracting State must grant the same protection to nationals of other contracting States that it grants to its own nationals), a sixth-month right of priority (the filing date of a first-filed regular trademark application in one contracting State may be claimed in subsequent applications filed in other contracting States within six months of that first filing date).

The Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS) of 1994, which was negotiated as part of the Uruguay Round of global trade negotiations and came into force in 1996, builds upon the pre-existing IPR conventions. It sets more stringent minimum standards, among other things, for trademark protection and lays down procedures and remedies to be implemented in national laws for IPR enforcement, which members of the World Trade Organisation (WTO) are required to meet. Countries must extend protection to internationally recognised trademarks in order to prevent their speculative registration and fraudulent use. It is important to recognise, however, that in many countries, the trademark standards negotiated under TRIPS were already part of pre-TRIPS law and jurisprudence (Watal, 2001).

With regard to enforcement, TRIPS sets standards on, among other things, enforcement procedures, the treatment of evidence, injunctive relief, damages, and provisional and border measures. At the same time, addressing concerns of some developing country WTO members, Article 41.5 makes clear that countries do not need to 'put in place a judicial system for the enforcement of intellectual property rights distinct from that for the enforcement of law in general.

Finally, the emergence of the Internet has led to another important form of international cooperation. A special resolution by the Internet Corporation for Assigned Names and Numbers (ICANN) established in 1999 the WIPO domain name dispute

resolution body, which provides holders of trademark rights with an administrative mechanism to challenge the bad-faith registration of Internet domain names that correspond to those trademarks. The arbitration of disputes between private parties by an inter-governmental organisation, such as WIPO, arguably represents the deepest form of international cooperation on intellectual property.

### 3. AN ANALYSIS OF DISAGGREGATED DATA ON TRADEMARK REGISTRATIONS

Trademark applications and registrations can be traced through operational statistics compiled by national intellectual property offices. These statistics can provide information on the cross-country and sectoral distribution of trademarks, as well as the use of international agreements, such as the Madrid Protocol. At the international level, WIPO compiles statistical tables that report country-specific application and registration data, relying on information supplied by national and regional intellectual property offices.<sup>7</sup>

Using the published WIPO data, we created a database that serves as the basis for the summary statistics and stylised facts reported in this section. The database spans from 1994 to 1998 and covers more than 100 countries, although the availability of observations and degree of disaggregation varies substantially across countries. Since the database contains information on registration, it is important to keep in mind that registrations refer to the *annual flow* of new trademarks, which may not necessarily be correlated with the *stock* of trademarks in force.

#### *a. Domestic versus Foreign Registrations*

Who accounts for a bigger share of trademarks, domestic residents or foreign residents? Calculating the share of foreign trademark registrations in total registrations across different income groups, we find that:

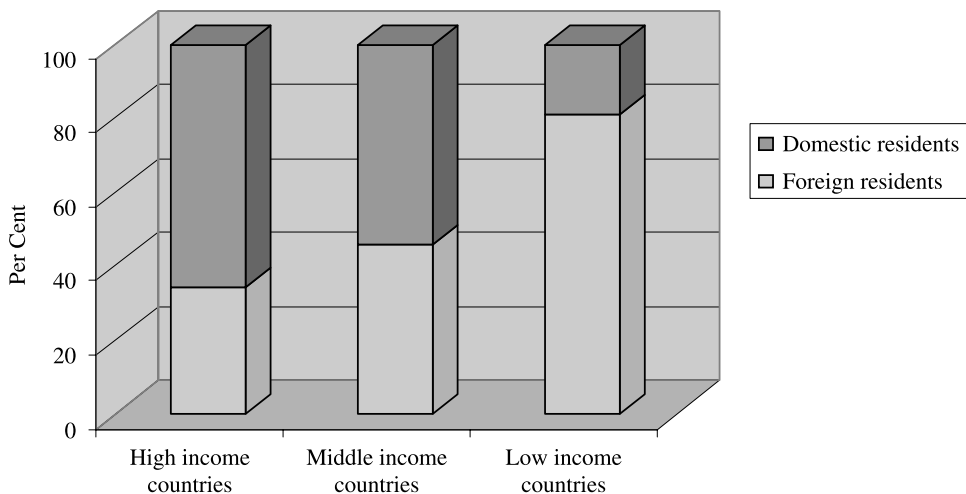
the majority of trademarks in high income countries are registered by residents, while the situation is reversed in low income countries, where a vast majority of trademarks are held by non-residents. The foreign share of registrations in middle income countries lies between those observed in the high and low income groups.<sup>8</sup>

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<sup>7</sup> It is important to recognise that there are many signs or brands used without being registered as trademarks. It is difficult to assess the ratio between non-registered and registered trademarks, but it is likely that in most developing countries this ratio is significantly higher than in developed countries.

<sup>8</sup> We used the World Bank Country Classification in assigning countries to different income groups. See <http://www.worldbank.org/data/countryclass/classgroups.htm>. High middle and low middle income countries have been lumped together as one middle income country group.

FIGURE 1  
Domestic versus Foreign Registrations, 1994–98



Notes:

The shares shown are simple averages of annual shares over 1994–98. Calculations are based on 95 countries in 1994 and 1995, 96 countries in 1996, 75 in 1997 and 74 in 1998.

As shown in Figure 1, foreign residents account for 34 per cent of total trademark registrations in high income countries. This compares to a foreign share of 46 per cent for middle income countries and 81 per cent for low income countries. These figures suggest that a higher level of development may be associated with generating more reputational assets, which lead to a greater dominance of domestic brands at home and a stronger presence of those brands in foreign markets.

To give a specific example: 217,333 trademarks were registered in the UK during 1994–98, of which 46.7 per cent belonged to non-residents. During the same period, British entities registered 125,472 trademarks abroad which is 8.4 per cent more than the number registered by British residents at home (one should keep in mind that the figure on foreign registrations encompasses registrations of the same trademarks in multiple countries).

*b. Where do Foreign Trademarks Come From?*

Further disaggregating foreign registrations by the country of origin of the trademark holder reveals that:

in all three country groups, residents from high income countries dominate foreign registrations, followed by residents from middle income countries and low income economies.

TABLE 1  
Breakdown of Foreign Registrations, 1994–98

	<i>Country of the Entity Registering a Trademark</i>			
	<i>High Income Countries (Per cent)</i>	<i>Middle Income Countries (Per cent)</i>	<i>India (Low Income) (Per cent)</i>	<i>Other Countries (Per cent)</i>
<b>Country where a trademark is registered</b>				
High income countries	90.53	3.04	0.10	6.34
Middle income countries	83.77	6.03	0.12	10.09
Low income countries	82.35	7.96	0.17	9.52

Notes:

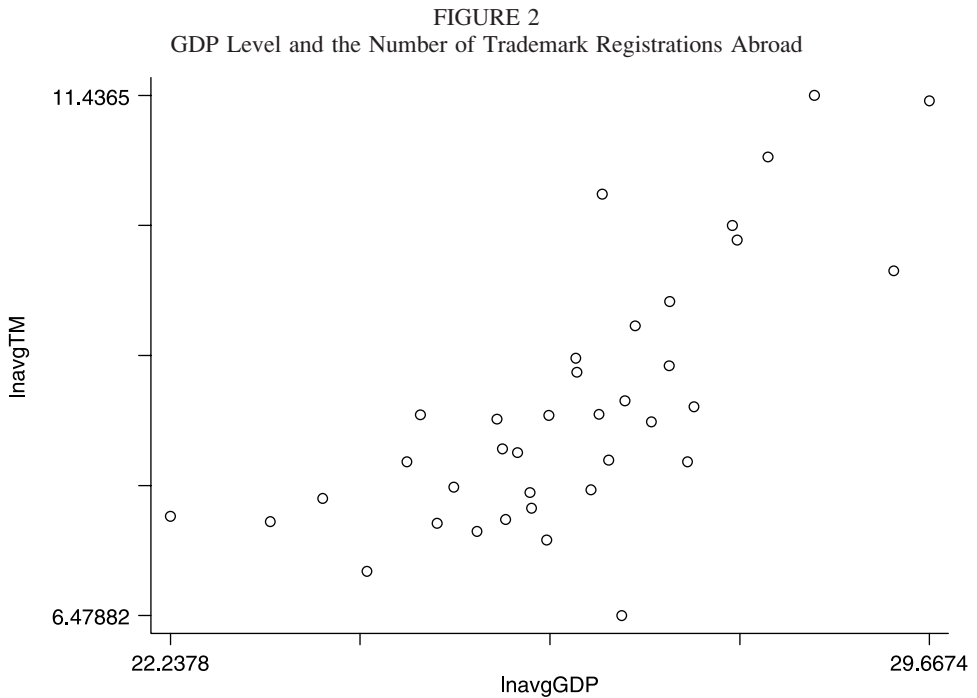
The shares shown are simple averages of annual shares over 1994–98. Calculations are based on 91 countries in 1994 and 1995, 92 countries in 1996, 73 in 1997 and 70 in 1998.

As shown in Table 1, registrations by *foreign residents* from high income countries predominate in all three income groups, accounting for 91 per cent in high income countries, 84 per cent in middle income countries and 82 per cent in low income countries. Registrations by foreign residents from middle income countries comprise a small share of total foreign registrations, representing 3, 6 and 8 per cent in high, middle and low income countries, respectively. Residents of India – the only low income source explicitly listed in the WIPO tables – have a negligible presence in foreign countries, making up only 0.2 per cent of foreign registrations in (other) low income countries, and only 0.1 per cent in middle and high income countries.

These shares, however, understate the presence of low and middle income countries in foreign trademark registrations. The statistical tables published by WIPO report a residual category ‘other countries’, which mostly consists of low and middle income countries not explicitly listed in the tables.<sup>9</sup> The category ‘other countries’ accounted for 6 per cent of foreign registrations in high income countries and 10 per cent in both low and middle income countries. Nevertheless, even if we combined middle income economies, India and ‘other countries’, their overall share in total foreign registrations would not exceed 18 per cent in low income countries, and 16 and 9 per cent in the middle and high income groups, respectively.

Another way of showing that larger and richer countries tend to register more trademarks abroad is to plot the number of trademark registrations in foreign countries against the GDP level of the registering country. As illustrated in Figure 2, we find a strong positive correlation between the two series.

<sup>9</sup> All major high income countries are explicitly listed in the WIPO tables.



## Notes:

Both the GDP and the number of trademark registrations abroad are expressed as the natural logarithm of the average value for the 1994–98 period. GDP figures are in constant 1995 dollars.

Firms have an incentive to register their trademarks in foreign markets where they sell or intend to sell their products.<sup>10</sup> Thus we would expect shares of trademark registrations by applicants from different income groups to be related to the shares of imports coming from their group to the country where the registration takes place. Thus, in Table 2 we present import flows between the different income groups. We focus on the same set of countries included in Table 1, but present data for 1996 only (the year for which data were available for the largest number of countries in Table 1). Indeed, we find that the vast majority of imports entering low, middle and high income economies originate in high income countries. Recall that a vast majority of foreign trademarks registered there also come from high income economies.<sup>11</sup> Moreover, we find that:

<sup>10</sup> For an econometric analysis of the relationship between trade and trademark registrations see Fink, Javorcik and Spatareanu (2003).

<sup>11</sup> For both international trademark and trade flows, we find that middle income countries make up a larger share of foreign trademark registrations in low than in (other) middle income economies, with the difference being more pronounced in the case of the trade figures.



TABLE 2  
Import Flows between Income Groups, 1996

<i>Importer</i>	<i>Exporter</i>		
	<i>High Income Countries (Per cent)</i>	<i>Middle Income Countries (Per cent)</i>	<i>India (Per cent)</i>
High income countries	81.77	17.43	0.80
Middle income countries	81.21	18.08	0.70
Low income countries	60.71	38.41	0.89

Source: Calculations derived from IMF, *Direction of Trade Statistics*, 1996. The sample is based on the same set of countries used for Table 1, which originally encompassed 92 importing countries and 39 exporting countries. However, two importing countries (Monaco and Andorra) and two exporting countries (Liechtenstein and Luxembourg) had to be excluded due to unavailability of bilateral trade data. Shares are calculated from c.i.f. valued import figures expressed in millions of US dollars.

over the period 1994–98, residents of middle countries have increased their share of foreign registrations in other middle income as well as in low income countries. At the same time, residents from India – the only low income source for which data are available – have increased their share of foreign registrations in high and middle income countries.

Table 3 provides the annual breakdown of foreign registrations for the period 1994–98 by income group of the registering party. To keep the information comparable across time, the sample is restricted to 53 countries for which those data for all years are available. Several patterns emerge. First, the share of foreign registrations by high income countries in other high income countries has fallen from 92.5 per cent in 1994 to 89 per cent in 1998, while middle income countries and what is lumped together as ‘other countries’ were able to expand their respective shares. Moreover, the share of India – although still tiny – has more than doubled, rising from 0.06 per cent in 1994 to 0.14 per cent in 1998.

The picture is similar in the middle income group, where the share of foreign registrations by high income countries fell from 87 per cent to less than 83 per cent in the time period under consideration. The increase in the share of middle income countries themselves is relatively more pronounced, rising from 4.7 per cent in 1994 to 7.7 per cent in 1998. And a low income economy, India, has more than tripled its share of foreign registrations in middle income countries. As already pointed out, however, India’s share remains very small, standing at only 0.16 per cent in 1998.

Finally, the most pronounced shift in foreign registration patterns seems to have taken place in low income countries. The share of high income countries dropped from 93 to 77 per cent during the period in question, while middle income countries and ‘other countries’ tripled their shares from 4 to 12 per cent

TABLE 3  
Foreign Registrations Broken Down by Income Groups, Annual Shares

<i>Foreign Registrations</i>	<i>Year</i>	<i>By High Income Countries (Per cent)</i>	<i>By Middle Income Countries (Per cent)</i>	<i>By India (Per cent)</i>	<i>By 'Other Countries' (Per cent)</i>	<i>By All Foreigners (Per cent)</i>
In high income countries	1994	92.51	2.23	0.06	5.20	100
	1995	90.85	3.91	0.09	5.14	100
	1996	90.97	2.60	0.11	6.33	100
	1997	90.11	3.23	0.10	6.56	100
	1998	89.11	3.44	0.14	7.30	100
In middle income countries	1994	87.11	4.66	0.05	8.19	100
	1995	86.78	4.53	0.08	8.60	100
	1996	82.95	5.59	0.12	11.33	100
	1997	82.68	7.89	0.13	9.30	100
	1998	82.76	7.68	0.16	9.40	100
In low income countries	1994	93.49	4.14	0.10	2.27	100
	1995	88.30	6.04	0.04	5.62	100
	1996	85.43	5.87	0.04	8.67	100
	1997	79.67	10.78	0.03	9.51	100
	1998	76.97	12.13	0.02	10.87	100

Notes:

For purposes of comparison, calculated shares only refer to 53 reporting countries, for which data in all five years are available.

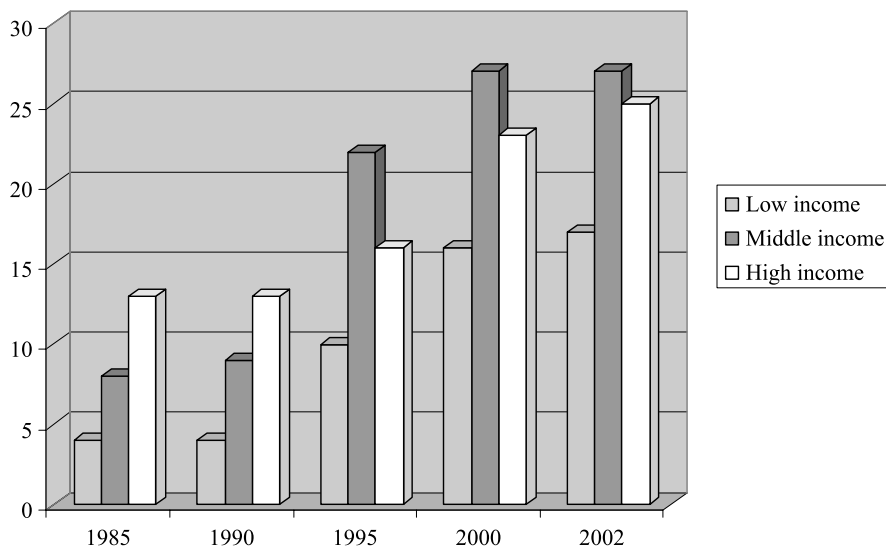
and from 2.3 to 11 per cent, respectively. In contrast to the patterns described for high and middle income countries, the share of India in other low income countries declined continuously from 0.1 per cent in 1994 to 0.02 per cent in 1998. The figures calculated for low income countries should be interpreted with due caution, however, as they are based on only seven reporting countries (Kyrgyzstan, Laos, Malawi, Mongolia, Republic of Moldova, Tajikistan and Ukraine).

In sum, across all income groups high income countries dominate trademark registrations by foreign residents. However, in recent years, trademark holders from middle income countries have increased their presence in high and middle income countries.

*c. Use of the Madrid System for International Registrations*

The Madrid system offers a cost- and time-saving way of registering trademarks internationally. Over time, membership to the Madrid system has increased considerably, from 25 participating countries in 1985 to 66 member states in 2000, and 69 in 2002 (Figure 3). Membership has increased across all income groups. Between 1985 and 1995, the number of low income parties increased from 4 to 16, the number of middle income parties increased from 8 to 27, and

FIGURE 3  
Number of Countries Member to either Madrid Agreement or Madrid Protocol



Source: WIPO.

the number of high income parties from 13 to 23.<sup>12</sup> The widened participation in the Madrid system has enlarged the benefits of individual membership, as trademark holders can designate a greater number of foreign destinations through one Madrid application.

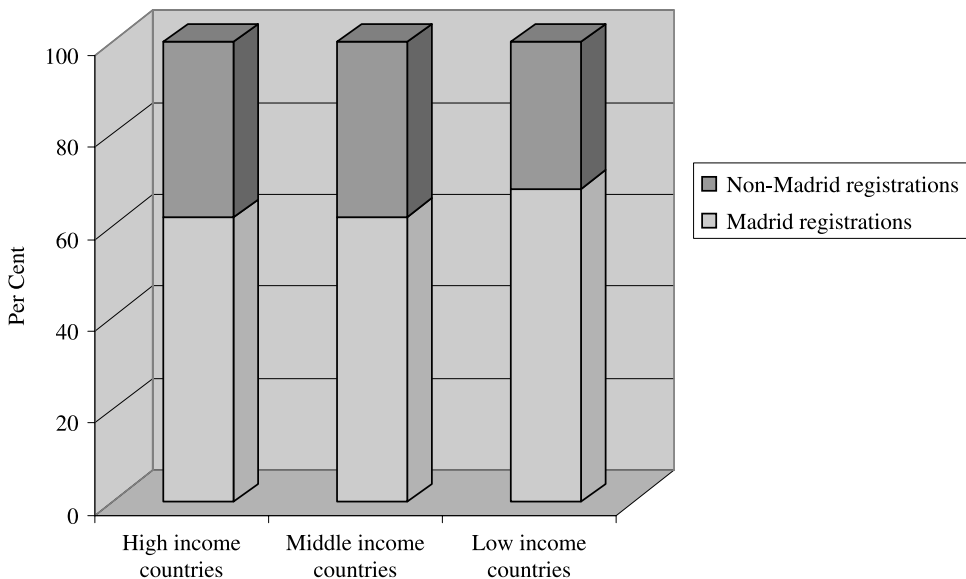
How intensively is the Madrid system used by trademark holders? Calculating the share of Madrid registrations in total foreign registrations in countries which reported the figures on Madrid registration in a given year, we find that:

the share of Madrid registrations in total foreign registrations is similar across country groups.

Madrid shares in 1998 averaged between 60 and 70 per cent in the three country groups (Figure 4). The corresponding share was the highest (68 per cent) in the low income group, followed by middle income countries and high income economies (both 62 per cent). Nonetheless, the main users of the Madrid system are likely to be residents from high income countries which account for the largest share of foreign registration across all countries (recall Table 1).

<sup>12</sup> It is interesting to note that large economies such as Canada, Japan, the United Kingdom and the United States have, so far, found the benefits of membership to be insufficient to accede to the Madrid system.

FIGURE 4  
 Madrid Registrations as a Share of Total Foreign Registrations (Madrid members only), 1998



Note:  
 Calculations are based on 40 countries.

#### *d. How Valuable are Trademarks Across Different Income Groups?*

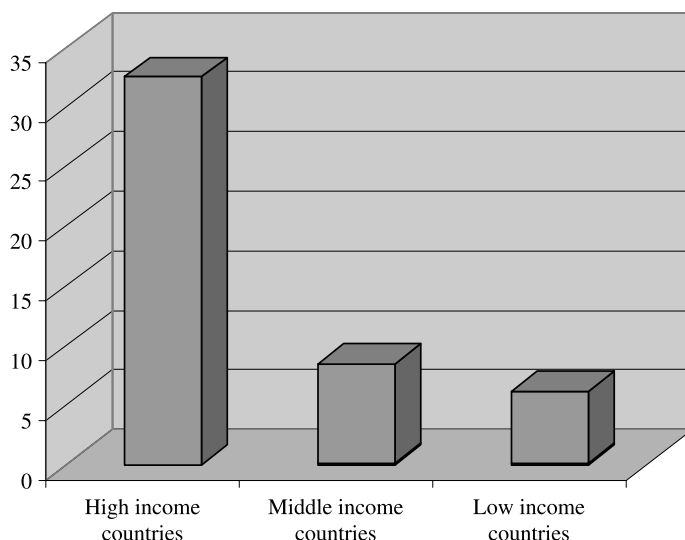
The economic value of trademarks differs significantly across firms, industries and countries. Understanding these differences would require a detailed micro-level analysis taking account of market-specific idiosyncrasies. Nonetheless, a crude indicator of the value of trademark registrations can be obtained by calculating the ratio of gross domestic product (GDP) to the number of registrations across income groups. In other words, this figure captures how many dollars of income fall on each registered trademark. We find that:

newly registered trademarks in high income countries account for four to five times as much of GDP than in middle and low income countries.

Figure 5 depicts the GDP-trademark ratios for the three income groups. In high income countries, each registered trademark accounts for 32 million dollars of GDP, about four times as much as in middle income countries (8 million dollars) and more than five times as much as in low income countries (6 million dollars).<sup>13</sup> Trademarks in high income countries appear more

<sup>13</sup> GDP figures are expressed in constant 1995 US dollars.

FIGURE 5  
Ratio of GDP to Number of Trademark Registrations, 1994–98



Notes:

Ratios are calculated as the sum of all GDPs for a particular income group over the sum of all trademark registrations in this income group. The figures shown are simple averages over the period 1994–98. The number of countries in the high income group varies from 28 in 1994 to 24 in 1998; in the middle income group the number fluctuates between 45 and 33 and for the low income countries between 21 and 11 during the period covered.

‘valuable’, despite the fact that more trademarks per capita are registered in these countries.<sup>14</sup>

While these cross-income group comparisons are interesting, the calculated dollar figures should be seen as only a very crude indicator of the value of trademarks. New registrations may not correlate closely with the stock of trademarks in force in a given year, which is likely to account for most of firms’ reputational assets in goods and service markets. In addition, the value of trademarks varies significantly across brands. Some estimates of the value of global brands have been made by Interbrand, a consultancy, based on projected revenues a brand is expected to generate. According to these calculations, the world’s most valuable brand in 2001, Coca-Cola, was worth 69 billion dollars. It was followed by Microsoft with an estimated value of 64 billion. The 100th most valuable brand, Benetton, was worth one billion dollars. By contrast, trademarks registered by small enterprises that primarily seek to protect reputational assets in local markets are significantly less ‘valuable’.

<sup>14</sup> Calculating the ratio of newly registered trademarks to population across income groups, we find that there are 0.87 trademarks per 1,000 inhabitants in high income countries, and 0.21 and 0.07 trademarks per 1,000 inhabitants in middle and low income countries, respectively.

*e. Sectoral Patterns*

The WIPO data also allow us to make comparisons between the number of trademark registrations in 33 manufacturing industries as well as agriculture (classified as one category) and eight service sectors.<sup>15</sup>

As Figure 6 indicates, scientific equipment and pharmaceuticals are the most intense users of trademarks in the world, followed by paper, detergents, and clothing and footwear. The data also indicate that:

there is a lot of similarity between the sectoral distribution of trademarks in countries belonging to different income groups.

The partial correlation between the importance of each sector in terms of its share in trademark registrations in middle and low income countries is 0.98. The corresponding figure for the high and middle income group is 0.88, while it takes a value of 0.84 for high and low income economies.

As Table 4 demonstrates, in all three income groups the same nine sectors ranked among the top ten categories in terms of their share in the total number of trademarks registered. These are such R&D-intensive sectors as pharmaceuticals and scientific equipment and advertising-intensive industries such as clothing, footwear, detergents and food products. Note that the pharmaceutical sector accounts for the highest percentage of trademarks registered in middle and low income countries (over eight and nine per cent, respectively), while among the rich countries scientific equipment tops the chart. In all three groups, service sectors (business services and 'other' services) are also among the most intensive users of trademarks.<sup>16</sup>

There is also some similarity in terms of sectors dominated by trademarks registered by foreigners (see Table 5). In all country groups these are pharmaceuticals, chemicals and detergents. Not surprisingly these are the sectors in which multinational corporations are very active. For instance, for 13 of the world's 100 largest transnational corporations these are the main sectors of operation (UNCTAD, 2001).<sup>17</sup>

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<sup>15</sup> The sectoral distribution of trademarks is based on the international classes of the Nice Classification which is used in many, if not most, national and regional trademark systems and in the Madrid system.

<sup>16</sup> The category 'other' services encompasses such diverse sectors as restaurants, hospitality services, medical and beauty care, agricultural services, legal services and computer programming.

<sup>17</sup> Some countries report the same registered trademark in several sectoral categories. By comparing the total of sectoral trademark registrations to the aggregate total reported separately by national trademark offices, we were able to identify the countries where multiple counting of registrations occurs. We re-calculated the sectoral shares reported in this section separately for countries that assign trademarks to only one sectoral category and for countries that allow for multiple designations. While sectoral shares and rankings differed somewhat from the ones reported for the total sample here, they were remarkably similar, suggesting that the potential bias from multiple counting is likely to be small.

FIGURE 6  
Sectoral Distribution of Trademark Registrations, 1994–98

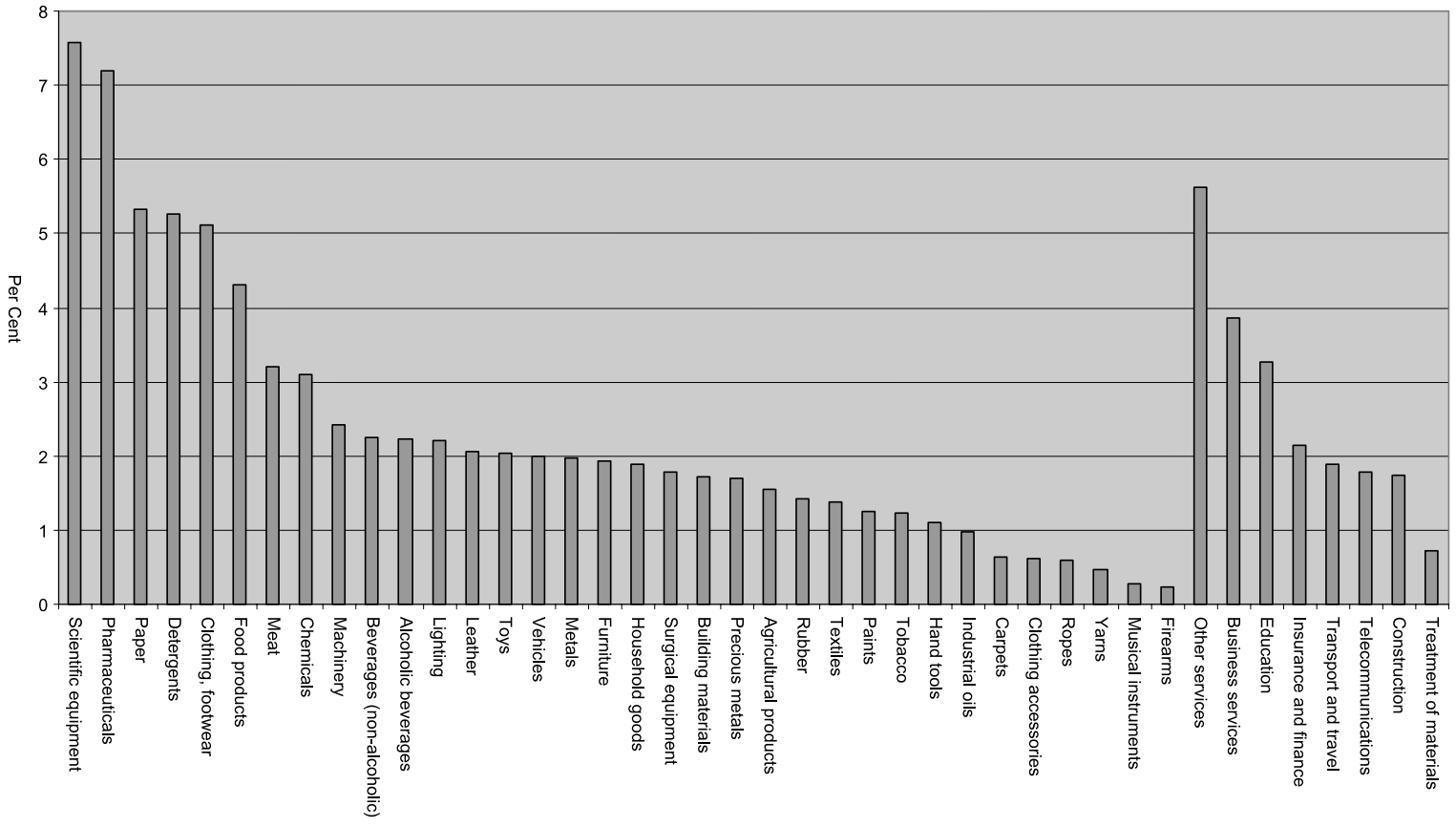


TABLE 4  
Sectors with the Highest Share of Trademark Registrations, 1994–98

*Sectoral Share of Trademark Registrations*

<i>High Income</i>		<i>Middle Income</i>		<i>Low Income</i>	
Scientific equipment	9.3	Pharmaceuticals	8.1	Pharmaceuticals	9.2
Paper	6.5	Scientific equipment	6.2	Detergents	6.7
Other services	6.3	Detergents	5.7	Scientific equipment	6.6
Pharmaceuticals	5.7	Other services	5.1	Other services	5.1
Clothing, footwear	5.7	Clothing, footwear	4.7	Food products	4.7
Business services	4.5	Food products	4.6	Clothing, footwear	4.5
Detergents	4.5	Paper	4.5	Paper	4.2
Education	4.3	Chemicals	3.6	Chemicals	3.4
Food products	3.9	Business services	3.5	Business services	3.1
Meat	3.3	Meat	3.2	Meat	2.7

Note:

For purposes of comparison, calculated shares only refer to 12 high income, 16 middle income and seven low income countries, for which data in all five years are available.

TABLE 5  
Sectors with the Highest Ratio of Foreign to Domestic Trademark Registrations, by Income Group, 1994–98

*Sectoral Share of Trademark Registrations*

<i>High Income</i>		<i>Middle Income</i>		<i>Low Income</i>	
Surgical equipment	3.56	Pharmaceuticals	5.40	Pharmaceuticals	36.61
Pharmaceuticals	3.02	Chemicals	4.91	Detergents	33.16
Detergents	2.85	Detergents	4.88	Chemicals	27.70
Tobacco	2.85	Precious metals	4.79	Industrial oils	24.66
Chemicals	2.56	Scientific equipment	4.50	Rubber	24.37
Machinery	2.46	Machinery	4.19	Leather	23.37
Vehicles	2.46	Vehicles	4.02	Telecommunications	23.01
Rubber	2.42	Lighting	3.98	Yarns	23.00
Hand tools	2.42	Leather	3.79	Carpets	21.43
Leather	2.31	Toys	3.67	Surgical equipment	19.59

Note:

Based on the sample described in the note to Table 4.

#### 4. CONCLUSIONS

It is widely recognised that a firm's, industry's and country's export performance is greatly affected by its reputation in foreign markets, access to information on trading opportunities and other intangible assets. The importance of reputation for product quality and good business conduct takes on added significance for



developing and least developed countries. Firms in these countries often lack a historical record or reliable trade performance and thus may be constrained in expanding into international markets. By contrast, firms whose reputation is already well-established abroad may find it easier to introduce new products into foreign markets and to gain additional customers. Data on trademark registrations can offer interesting insights into how reputational assets are distributed and how they are exploited in international commerce.

The stylised facts presented in this paper indicate that there exists asymmetric ownership of trademarks. The majority of trademarks in the world, including those in developing countries, have been registered by firms from industrialised countries. At the same time, the global distribution of trademarks is not as uneven as the global distribution of invention patents. Primo Braga et al. (2000), for example, report that in 1994–95 less than five per cent of worldwide patents granted to residents only (approximating the first filing of patents) belonged to developing countries.<sup>18</sup> This pattern may indicate that firms in developing countries are more likely to differentiate themselves by investing in brands rather than new technologies. It also suggests that a larger number of firms in developing countries may benefit from a stronger enforcement of trademarks rather than from a stronger enforcement of patents.<sup>19</sup>

In the case of patents, economists have traditionally associated asymmetric intellectual property ownership with rent transfers from the developing to the developed world (see McCalman, 2001). It is less clear to what extent asymmetric trademark ownership may be the source of similar rent transfers. Trademarks, unlike patents, do not necessarily confer market power to the intellectual property-holding firm and can, in principle, coexist with a competitive market structure. However, when consumers are imperfectly informed or attach a status value to products, competition may be imperfect (see Fink and Smarzynska, 2002) and trademark owners may generate rents. More research is needed to assess the extent of cross-border rent transfers associated with trademarks, and the dataset introduced in this paper could serve as the basis for an empirical analysis.

#### REFERENCES

- Fink, C. and B. Smarzynska (2002), 'Trademarks, Geographical Indications and Developing Countries', in B. Hoekman, A. Mattoo and P. English (eds.), *Development, Trade and the WTO: A Handbook* (The World Bank, Washington, DC).

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<sup>18</sup> For industrial designs – another form of registered intellectual property – the global distribution is even more asymmetrical. Less than one per cent of domestic grants originated in the developing world.

<sup>19</sup> Anecdotal evidence on the use of the intellectual property system by Chinese firms confirms this point. See Maskus et al. (forthcoming).

- Fink, C., B. Smarzynska Javorcik and M. Spatareanu (2003), 'Income-Related Biases in International Trade: What Do Trademark Registration Data Tell Us?' World Bank Policy Research Working Paper 3150 (The World Bank, Washington, DC).
- Landes, W. M. and R. A. Posner (1987), 'Trademark Law: An Economic Perspective', *Journal of Law and Economics*, **30**, 2, 265–309.
- Maskus, K., S. M. Dougherty and A. Mertha (forthcoming), 'Intellectual Property Rights and Economic Development in China', in C. Fink and K. E. Maskus (eds.), *Empirical Investigations on the Effects of Intellectual Property Protection on Market Structure, Trade and Foreign Direct Investment* (Oxford University Press).
- McCalman, P. (2001), 'Reaping What You Sow: An Empirical Analysis of International Patent Harmonization', *Journal of International Economics*, **55**, 1, 161–86.
- Primo Braga, C. A., C. Fink and C. Paz Sepulveda (2000), 'Intellectual Property Rights and Economic Development', World Bank Discussion Paper No. 412 (Washington, DC: The World Bank).
- UNCTAD (2001), *World Investment Report. Promoting Linkages*.
- Watal, J. (2001), *Intellectual Property Rights in the WTO and Developing Countries* (Oxford University Press).