



Technology Licensing

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Introduction

An empirical study of IPR and technology licensing in the OECD area.

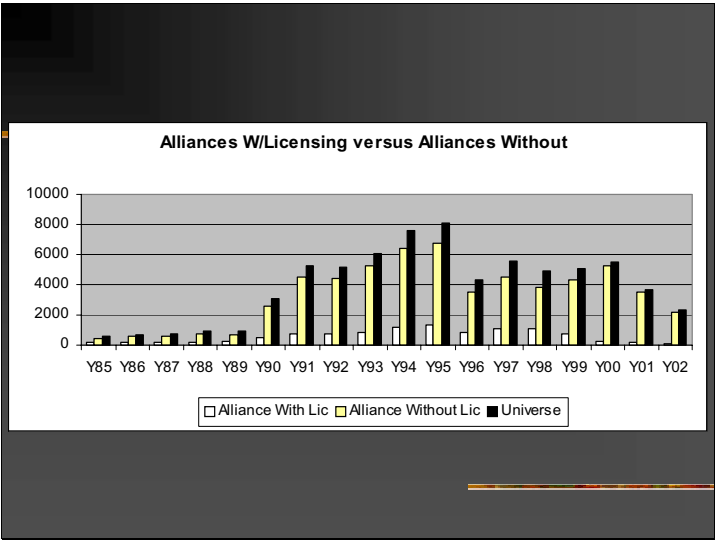
The report is built around three core Sections:

- n International Licensing Trends
- n Determinants of Technology Licensing
- n Practitioners' Views on IPR and Licensing

Trends 1985-2002 (SDC)

Licensing activity has tended to follow aggregate alliance trends both in terms of time evolution and in terms of broad sectoral allocation.

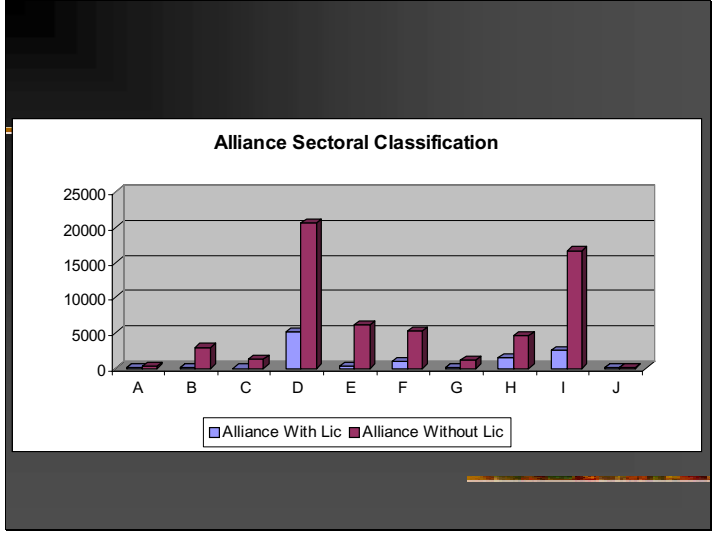
Following a rapid increase of reported alliance agreements with technology licensing content between mid-1980s and mid-1990s, such agreements have, according to SDC, spiraled downward equally fast the past few years to reach levels comparable to those experienced in early 1980s.



Trends 1985-2002 (SDC)

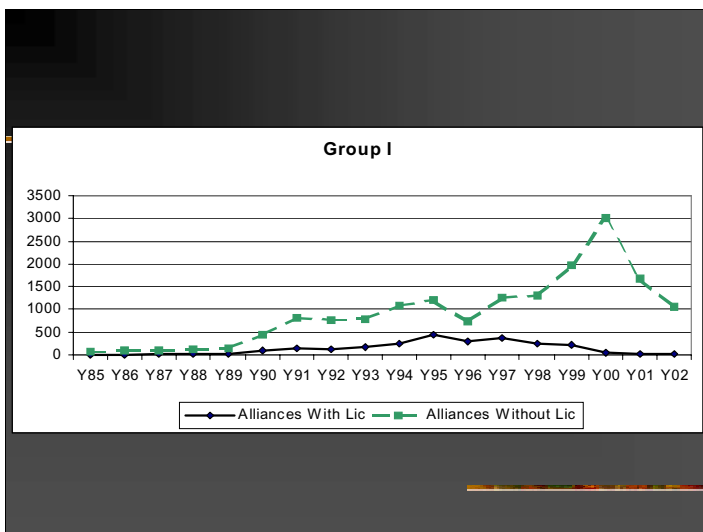
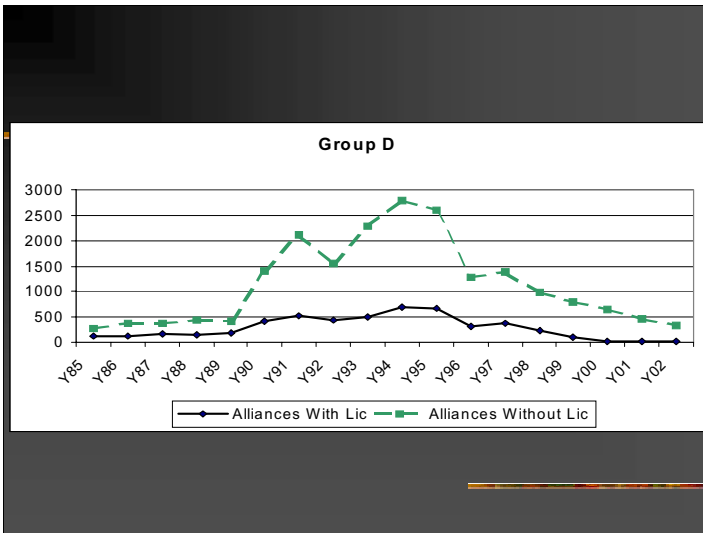
Manufacturing and service sectors have accounted for the bulk of the recorded surge in licensing agreements. At some distance follow wholesale trade and finance and insurance.

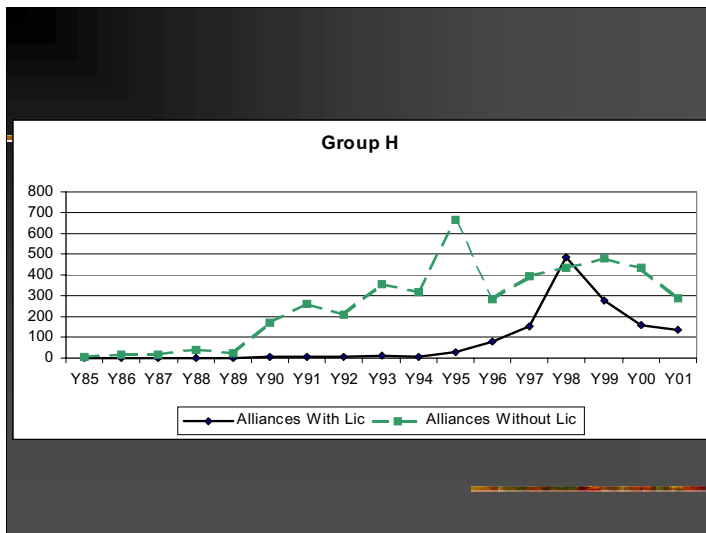
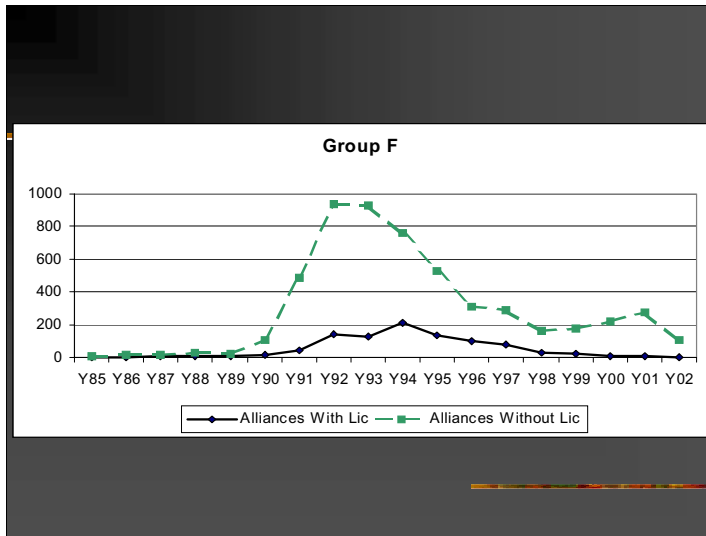
With some variation, the time evolution of alliances with and without licensing agreements have reflected each other in each of ten broad sectoral groups (containing all industries).



Trends 1985-2002 (SDC)

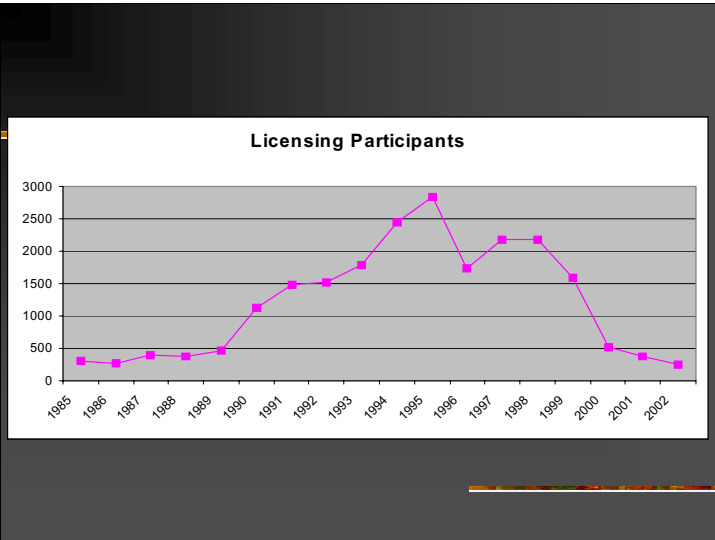
The very significant drop off in more recent years has, by and large, been the result of a precipitous sinking of the number of publicly announced licensing agreements in **manufacturing** and **services**, the two sectoral groups exhibiting the largest numbers of licensing agreements over the examined time period. The levels of publicly announced technology licenses in these two sectoral groups in the period 2001-2002 have been even lower than those of the early 1980s. This is not true for the next couple of sectoral groups, **wholesale trade** and **finance and insurance** where, even though significantly lower than the 1990s, the levels of observed licensing agreements remain higher than those in the early 1980s.





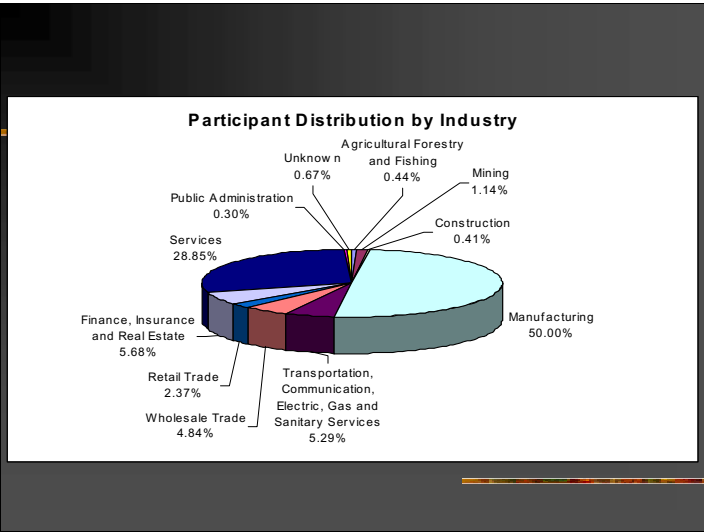
Trends 1985-2002 (SDC)

The number of participants in alliances with licensing content has also fluctuated very extensively during the examined time period. We observe a huge bulge in participant numbers starting in the late 1980s and continuing throughout the 1990s, followed by a relative stabilization later in the decade and a precipitous drop in the last 2-3 years. The number of participants registered in the peak year (1995) was about seven times larger than the number of participants registered in the mid-1980s and the early 2000s.



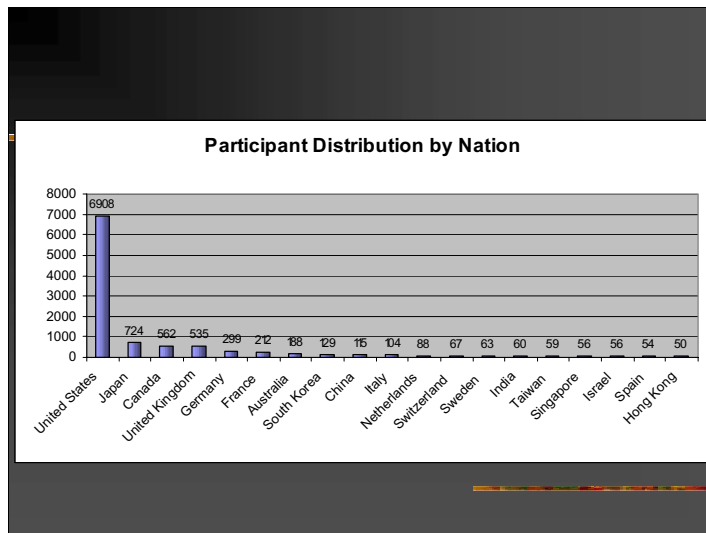
Trends 1985-2002 (SDC)

The vast majority of entities participating in alliances with licensing content are from the private sector (more than 98% of the total). Manufacturing and service sectors account for 50% and 29% of participating companies respectively. They are followed at a large distance by wholesale trade, finance and insurance, and transportation, communication, gas and electric.



Results 1985-2002 (SDC)

The set of participating organizations in licensing alliances reported by SDC is heavily biased towards companies based in the United States. Organizations from Japan, the United Kingdom, Canada, and Germany follow at a great distance.



Determinants of Tech Licensing

The *theoretical model* appraises inter-firm technology licensing within a broadly defined industry.

Strategic considerations prove very important in intra-industry licensing.

The licensors' incentives to sell technology are found to increase in:

- (i) the degree of product differentiation between the licensor and the licensee(s);
- (ii) the degree of product similarity between licensors;
- (iii) the degree of knowledge appropriability.

The cost of technology transfer affects incentives to license out technology negatively.

Determinants of Tech Licensing

The *empirical analysis* focuses on technology licensing incentives between specific dyads of companies while broadening the inquiry to also include licensing across sectors.

The analysis is carried out with the help of a large panel data set of observed licensing transactions during the period 1990-1999 drawn from SDC involving many hundreds of companies traded in the United States.

Technology owner's incentives to license technology are explained by sets of variables reflecting

- (i) the relationship between licensor and licensee,
- (ii) the characteristics of either firm,
- (iii) the characteristics of the primary industry of the licensor.

Determinants of Tech Licensing

The most important explanatory factors of the probability that two firms will engage in a technology licensing agreement relate to the relationship between them and to the characteristics of each.

Companies engage in licensing agreements the closer their technological and market profiles are and the more familiar they are with each other through prior licensing agreements.

Determinants of Tech Licensing

Previous independent licensing experience of both the licensor and the licensee strengthens the probability that they will engage in a licensing agreement together.

The patent intensity of the primary line of business of the licensor and, by extension, the strength of intellectual property protection in that sector provides an impetus for the pair to engage in technology licensing.

All these factors tend to decrease licensing transaction costs

Determinants of Tech Licensing

A core implication of the combined theoretical and empirical analysis is that transaction cost factors tend to weigh in more in explaining licensing behavior across sectors whereas strategic, competition-related factors assume the lead role in within-industry licensing.
