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Positional Goods and Asymmetric Development[2].

Introduction.

Standard international trade theory considers the case in which countries specialize in the production of private goods. In an open economy, countries specialize in the production of the private goods in which they have a comparative advantage. In this way, all countries gain from trade and improve their welfare and their level of development. This theory has even more optimistic implications when public goods are included in the picture. Most catch-up theories of development were based on the idea that the most wealthy and advanced countries were likely to specialize in knowledge-intensive processes and, therefore, make substantial investments in public goods that could also be used by countries that were less rich. International trade would have either implied symmetric benefits or even repaired pre-existing asymmetries between developed and developing countries.

In this paper, we will argue that this picture changes substantially when we introduce positional goods into the analysis. Positional goods can be viewed as a case polar to that of public goods. If "first world" countries specialize in goods sharing an a positional nature, this optimistic view of global development changes and international trade may lead to forms of increasing asymmetric development. In the following section, we consider the characteristics of positional goods. In section 3 we give a very short account of the role that positional goods like status and power can play as a possible

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causes of asymmetric development. In section 4 we argue that that also money (the most typical example of a reputational good) can be an important cause of asymmetric development. In section 4, we build on Hohfeld-Commons analysis of jural relations and argue that legal disequilibrium can be the cause of the asymmetric effects that competition generates in the different countries. Finally, in section 5 we consider the role of the global legal positions defined by intellectual property and we maintain that they have an important role in causing diverging paths of international specialization. We argue that the recent process of globalization can be seen as a shift from an international order in which the public goods supplied by developed countries had an important role to a new global order that is mainly driven by their specialization in positional goods.

2. The nature of positional goods.

In his famous book, Fred Hirsh (1977) argued that positional goods were posing social limits to growth. Hirsh argued that, while some goods could be produced without limitations, other goods, which he labelled positional goods, were only available in limited supply. Economic development implied an increasing price of positional goods and was inevitably constrained by the scarcity of these goods.

Under the umbrella of positional goods Hirsh included two types of goods. The supply of the first set of goods was limited by their natural scarcity. By contrast, the second set included goods like power and status, whose supply was limited by their social scarcity. In both cases, the possibility of acquiring these goods was related to the relative standings of the individuals and a process of development could not improve everybody's chances of getting them. The importance of relative positions induced Hirsh to use the term positional goods for both types of goods. However, the two types of goods have different characteristics and, in my view, only the second category deserves the label of positional goods.

Goods, such as natural resorts that cannot be reproduced, are positional only in the weak sense that the relative positions of the individuals matter to acquire them.

Natural scarcity implies that a form of social scarcity, related to the relative standings of the different individuals, does indirectly matter. However, these goods could be consumed independently of the behaviour of other individuals and, indeed, more easily without their interference. Moreover, an egalitarian consumption of these goods is not impossible and it is indeed a likely outcome when there are no relevant differences in the social standings, the relative wealth and the preferences of the different individuals.

The positional nature of the second category of goods is much stronger: in the act of consumption, individuals must necessarily divide themselves in two different groups of "positive" and "negative" consumers. Consider the case of status and power. Any positive amount of power and prestige must be jointly consumed with negative quantities of it. It is impossible for some individuals to exercise power if other individuals do not undergo the exercise of this power or, in other words, it is impossible for somebody to dominate if somebody is not dominated: positive power must be jointly consumed with negative power[3]. In a similar way, it is impossible for somebody to consume prestige or "social superiority" if others do not consume some social "inferiority". Again positive and negative amounts of the good must be jointly consumed. No soccer team can consume three points of advantage if another team is not consuming three points of disadvantage. Unlike the features of unique natural resorts, the positional characteristics of these goods are intrinsic to their nature. In this case, it is impossible to consume positive amounts independently of the behaviour of some other individuals who must undergo a negative consumption of the same goods. Moreover, the egalitarian consumption of these goods is seriously limited by their intrinsic positional nature. If everybody can be somebody, nobody can be somebody: it is impossible for all the members of a group of individuals to be equally powerful and prestigious without spoiling the very meaning of these goods that do necessarily imply a divisive consumptions with two opposite signs.

We define by positional goods only the second category of goods that are, somehow, related to the legacy of Veblen (1899). We will observe that, unlike the first category (which does not differ from the standard scarce economic goods), the second category of goods requires an extension of the standard economic classification into private and public goods.

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3 On different concepts of power see Bowles, Franzini, Pagano. (1999), Bowles, Gintis (1999), Pagano (1999).

Private goods are characterised by the fact that other individuals consume a *zero amount* of what a certain individual consumes. The other individuals are excluded from the consumption of these goods.

This exclusion is impossible in the case of a public good and other agent will consume positive amounts of the good supplied by each particular individuals. In the case of a pure public good another agent consumes the *same positive amount*.

In the case of positional goods, like status and power, when some individuals consume these goods other individuals must be included in consumption of related negative quantities. A pure positional good can be defined as a good such that an agent consumes the *same but negative amount* of what another agent consumes. A three score advantage of a soccer team must be jointly consumed with the disadvantage of the competing team. In this respect pure positional goods define a case that is polar to the case of pure public goods[4]. In general, in the case of positional goods, individuals' consumptions have opposite signs.

Consider the case of Robinson Crusoe's island. At beginning, before Friday's arrival, Robinson will not observe any relevant difference among the goods that he consumes. He cannot perceive the distinction between private and public goods. The impossibility of exclusion, that distinguishes public goods from private goods, cannot be perceived in a situation where there are not other individuals and positional goods cannot be consumed at all if nobody else is included in their negative consumption. When Friday arrives, the distinction between public and private goods becomes evident and, according to the common prejudices of his time, the white civilized Robinson can start to consume positive amounts of positional goods such as status and power. Thus, as a result of Friday's arrival, goods can be classified according to the following categories:

	Robinson	Friday
Public good	+	+

4 This definition is given in Pagano (1999). A different definition, based on rank, is given by Frank (1985). Frank definition is focuses on the definition of status and is not also related to the definition of the exercise of power.

Private good	+	0
Private good	0	+
Positional good	+	-
Positional good	-	+
Public bad	-	-

Given these relations, it is not surprising that the problems of positional goods are opposite to the problems of public goods. In the case of public goods we have the standard under-investment problem in their supply (and in their abatement when they are public bads). By contrast, in the case of positional goods we have a problem of over-investment. All the agents may try to consume positive amounts of these goods and include other individuals in the corresponding negative consumption. For this reason, "positional competition" is much harder, and sometimes more violent, than competition for "private" goods. It is also wasteful because individual efforts do often offset each other. In some cases, they may end up with the same outcome that they would have achieved if they had not dedicated any effort to the improvement of their relative positions.

The standard maximum welfare conditions can be generalized to include the case of positional goods. Let us assume that we have two goods: one good y, which is "a-priori" defined as a private good and another good x that has many "a-posteriori" definitions" according to the values taken by the fraction t_{ih} of x that individuals i consumes when individual h consumes a quantity x_h.

We can, therefore, distinguish among the following three "pure" cases:

1) t_{ih} is equal to O.
This is the standard case of private goods where no individual i consumes fractions of the goods that are also consumed by other individuals h.

2) t_{ih} is positive.
This is the case of (semi)public goods where individuals i consume positive fractions of the good consumed by each individual h. When, for all the individuals i and h, t_{ih} is equal to one, x is a pure public good. When t_{ih} is equal to 1 for some individuals and O for other individuals, we have the standard case of local public goods.

3) t_{ih} is negative.
In this case x is a (semi)positional good. Other individuals i consume negative fractions when h consumes a positive amount x_h. When t_{ih} is equal to -1 for all the individuals i different from h, we have a case symmetric to pure public goods and we can label x a pure "pan-positional good". An advantage in a soccer team ranking is an obvious example of a pure pan-positional good. Also positional goods can have the characteristics of "local" positional goods. A particular case of such positional goods are the bi-positional goods where, when h consumes x, only one individual consumes a fraction equal to 1 of the positional good while all the other individuals consume zero quantities of the good. A master-servant relation can be considered as an example of this type of bi-positional goods.

While pure cases may be interesting, semi-public and semi-positional goods are likely to be more common cases. Moreover one cannot exclude cases of goods that are public goods for a group of individuals and are, at the same time, positional goods for another group of individuals. National security is one of these goods. It is considered to be the classic text-book case of a pure public good in the sense that when an individual h of a nation consumes additional units of national security, the other individuals i

consumes the same amount (t_{ih}=1) of the good. In this sense, the undersupply of national defence would be the outcome of a stateless nation and national defence is the classic public good requiring state intervention. However, the consumption of national security by the individuals of some nation can involve a corresponding consumption of national insecurity by the individuals of another rival nation ((t_{ih} = -1 for these individuals) and be an example of a pure positional goods. For this reasons, investments in national security are also said to be characterized by oversupply and can easily degenerate in wasteful arms' races.

We can generalize the standard model of welfare economics to deal with all these cases by assuming that each individual i will consume a quantity y_i of the private good and quantities $t_{ih}\ x_h$ of good x. Let us denote by $\boldsymbol{\mu}_i$ the weight given to the utility function of individual i in the social welfare function and by T(y,x) the social transformation function between the two goods.

The maximization problem for society taken as a whole is:

Max: $W = \mu_i\ U_i\ (y_i, t_{i1}\ x_1 + t_{i2}\ x_2 + \ldots\ldots\ldots\ t_{ii}x_i + \ldots t_{ih}x_h + \ldots\ t_{in}x_n) + \sum_h \mu_h\ U_h\ (y_h, t_{hi}\ x_i + t_{h2}\ x_2 + \ldots t_{hh}\ x_h + \ldots\ldots t_{hi}x_i + \ldots\ldots t_{in}\ x_n)$

$(h = 1\ldots\ldots n \text{ and } h \neq i)$

subject to a: $T\ (x,y) = 0$

We obtain the following conditions[5]:

$t_{ii}MRS^i(x_i,y_i) + \sum_h\ t_{hi}\ MRS^h(t_{hi}\ x_i, y_h) = MRT(x,y)$ (1)

5 See Pagano (1999).

Conditions (1) express the most general case and they are also compatible with cases, such as national security, in which t_{hi} is positive for some individuals and negative for other individuals.

In the case of private goods (t_{ih} is equal to 0 and t_{ii} is equal to 1), conditions (1) become:

$MRS^{i}(x_i,y_i)= MRT(x,y)$

In the case of pure public goods (t_{ih} and t_{ii} are both equal to 1) conditions t_{hi} become:

$MRS^{i}(x_i,y_i) + \sum_h MRS^{h}(x_i,y_h) = MRT(x,y)$

In the case of bi-positional good (t_{ih} is equal to -1 for h=j and otherwise equal to 0; t_{ii} is equal to 1) conditions (1) become:

$MRS^{i}(x_i,y_i) - MRS^{j}(-x_i,y_i) = MRT(x,y)$

Finally, in the case of pan-positional good (t_{ih} is equal to -1 for all individuals h; t_{ii} is equal to 1) conditions (1) become:

$MRS^{i}(x_i,y_i) - \sum_h MRS^{h}(-x_i,y_h) = MRT(x,y)$

In the case of private goods the fact that an individual consumes units of the good has no effect on the level of consumed by the other individuals who can be excluded from the consumption of the good. By contrast, in the case of pure public goods non-rivalry in consumption and the impossibility of exclusion implies that the marginal rates of substitution of other individuals have to be added to that of the individual consuming the good. Finally, in the case of positional goods, the necessity of including other individuals in the negative consumption implies that their marginal rate of substitution have to be subtracted to the marginal rate of substitution of the individual consuming the (corresponding positive amount of the) good. A comparison of this extended set of

maximum welfare conditions with those of standard competitive markets shows that, while public goods are going to be undersupplied, positional goods are going to be oversupplied (see Pagano 1999). In the first case, there are missing markets to bargain with the individuals who cannot be excluded from a joint consumption of positive amounts of the good. By contrast, in the second case, there are missing markets to bargain with all the individuals who must be included in the corresponding negative consumption.

3. The Role of Status and Power in Economic Development.

For too long, status and power have been overlooked in much economic reasoning. They are very important for the issues concerning economic development. One can, even, argue that the stagnant nature of agrarian societies and the dynamism of capitalist societies is due to these types of positional goods. These societies turn out to have different relations between these "sociological dimensions" (resulting from an enlargement of the space of "economic goods" to values where t_{hi} assumes negative values) and the investments in both human and non-human capital.

In agrarian societies, coercive power and status determine the access to wealth and to education. The positions of individual in society in terms of power and status are relatively fixed and, usually, given by birth. They determine the access of the individuals to education and to wealth. The opposite direction of causality (from education and wealth to power and status) is much weaker and it is often explicitly repressed.

In capitalist societies, causation flows often in the opposite direction. The positions of the individuals are not given in terms of power and status while access to education, occupations and wealth accumulation is not explicitly forbidden to some individuals. While status and power can sometimes favour the access to some occupations and to the accumulation of wealth, this relation is rather weak and is not typical of an "industrial society". The opposite is true. The accumulation of wealth and of human capital is now the way by which individuals can acquire power and status.

We could simplify the argument by saying that, while in an agrarian society a given distribution of status and power determines the distribution of wealth and the access to education, in an industrial society the acquisition of wealth and education determines the distribution of status and power. In other words, under the two social arrangements, causation between power and status on the one hand and physical and human capital on the other flows in two opposite directions[6].

In an agrarian society the distribution of power and status is fixed by birth and determines the access to wealth and education. For this reason there is little incentive to innovate and to accumulate wealth and the society is often stuck in stagnant conditions. Here, social scarcity constrains natural scarcity in a strong way because the fixed allocation of power and status positions destroys the incentives that can generate a process of economic development. The accumulation of human and physical capital is blocked by the constraint that it cannot be allowed to upset the fixed distribution of power and status. Thus, in welfare terms we are well likely to have an "under-accumulation" of wealth.

In an industrial society the distribution of power and status is not fixed by birth in the sense that there is no given percentage of blue blood that guarantees a given position in society and a given access to the wealth produced by society. The opposite is rather true. Access to wealth via productive and innovative activities gives access to temporary positions of power and status. However, unlike wealth, power and status are zero-sum goods and the increase in the positive consumption of positional goods by some individuals brings about an increase of negative consumption by some other individuals. Here, social scarcity, far from limiting the incentive to produce and innovate, brings about a drive to accumulate physical and human capital that is often unrelated to the aim of increasing present or future consumption of material wealth. While the desire of riches may well be limited by the human capacity to enjoy wealth, social scarcity may well bring about an unlimited drive to accumulate. When wealth is only aimed at the acquisition of positional goods, more wealth means a temporary advantage for somebody and a corresponding disadvantage for others that can be cancelled only by accumulating an even greater amount of wealth. The result is an "over-accumulation" of physical

6 This section draws on Gellner contributions (1983, 1998, 1999). For an account of Gellner's work see Pagano (2003).

capital that is in sharp contrast with the "under-accumulation" that characterises agrarian societies. A similar argument holds for the accumulation of human capital. While the necessity of keeping the fixed ranks of agrarian societies limits the access of education to the elite of these society, in industrial society the access to education is not only open to everybody but it is one of the means by which one can access to socially scarce positions. As it was observed by Fred Hirsch (1977), an over-accumulation of education may take place because only the relative level of education matter for the access to a given social position. Thus, whereas agrarian societies are characterised by the under-accumulation of human and physical capital, modern capitalist societies may, often, tend to over-accumulate both forms of capital. While this way of reasoning may be too schematic to provide a satisfactory account of asymmetric patterns of economic development, it shows that the relations between positional goods and other economic variables can easily push economic systems towards different directions. More insight in these effects can be gained by considering the positional nature of money that may be considered as the most "pure case" of a reputational good.

4. The positional nature of money.

In real life market economies, the goods that have a reputation for higher marketability command a higher value. However, the importance of the relative status that commodities have in terms of liquidity disappears in abstract theoretical constructions such as the Arrow-Debreu model where all goods are equally liquid and can be used as means of exchange. The absence of a specific good with the role of money does not imply that the Arrow-Debreu model is a barter economy. In barter economies, no commodity is liquid and exchange requires a double coincidence of wants. By contrast, in a Arrow-Debreu "super-monetary economy" all goods are perfectly liquid and have got the status of money. In order to get closer to reality, the real issue is not the “introduction of money” into general equilibrium but it is rather the elimination of the too many money-like commodities that exist in that ideal theoretical construction. In a world,

characterised by positive transaction costs, commodities have different degrees of liquidity and individuals are ready to pay more for those commodities that have money-like attributes. Commodities are ranked according to their reputation for liquidity and governments can guarantee this differential reputation also for commodities that have otherwise no-use value. Differential reputation for liquidity has dramatic self-reinforcing effects. If the liquidity reputation of a commodity is high, it is used as intermediary in a greater number of transactions and, in this way, it increases its liquidity reputation. The possibility of reaping the fruits of this self-sustaining advantage leads to a fierce positional competition among different potential currencies. The winner can then reap the fruits of its differential reputation for a rather long time because the widespread diffusion of a currency is by itself the source of a great reputation advantage. While many national governments have fought for this differential status of their currencies, the cumulative causation between reputation and diffusion has usually implied the existence of a clear winner and of some potential competitors that try to challenge the winner with the "hardness" of their currencies[7]. Many other governments are not able to compete in this game and are trapped in a vicious circle of devaluation that, with opposite signs, is symmetric to that of the winner. Low diffusion implies low reputation and vice versa. Currency substitution for hard currencies brings about devaluation and the expectation of devaluation fuels currency substitution. Also in the case of currencies positional competition is highly wasteful. The currencies, challenging the winner, have to follow rather restrictive policies that compensate the greater liquidity of the dominant currencies with the hardness of their own currency. Even this costly strategy is not available to the weaker currencies. They suffer indirectly from the positional struggle happening at the top and are trapped in a vicious circle of currency substitution and devaluation. While the country of the winning currency is able to obtain for free (against the paper employed in the production of their currency) real goods and services, poor countries have to supply these goods without getting much in exchange. While currencies are perhaps the most extreme case of a reputational good, the decentralization to developing countries of production of famous western trademarks can be partially seen in a similar way[8]. Also in

7 This point, as well as much of this section, draws from the work of Sawada and Yotopolus 2006.
8 Also on this point, see Sawada and Yotopolus 2006.

this case a reputational positional good (the trademark) is exchanged for standard economic goods. The international protection of the trademarks is one aspect of the global dimension of intellectual property rights that we are going to consider in the following sections.

5. Jural Relations and Positional Competition.

Building on the work of Hohfeld (1919), Commons (1924) proposed the following table that highlights the positional nature of legal relations Table 1[9] :

Table 1: First order jural relations.

Right of x	Duty of y
Exposure of x	Liberty of y

In this simple two-individual-relation the set of actions for which x has rights do not only define the duties of y. They define also the remaining actions for which y has the liberty to act (i. e. the set of actions for which x has no right to interfere and is exposed to the liberties of y). In other words, in this simple framework, the jural relations entail that the boundary between the rights and the exposures of x should coincide with the boundary between the duties and the liberties of y and vice versa.

9 For a modern analytical defence of Hohfeld analysis see Kramer (2001).

For instance, ships that are in danger enjoy some legal right to be helped by other ships. This right is necessarily correlated with the duty of other ships not to leave when another ship is in danger. This duty does also necessarily entail that other ships do non have the liberty to leave and that the ship, which is danger, is not exposed to the liberty of other ships of refusing help.

In these legal relations there is a social scarcity that is typical of positional goods. The rights of some agents can only be enlarged by restricting the liberties of other agents and vice versa the liberties of other agents can only be enlarged by exposing other individuals to these liberties that is by limiting their rights to interfere with their actions even when they dislike them.

The positional nature of legal relations implies that rights and liberties can be oversupplied. This is likely to happen if politicians and other agents do not take into account the correlated duties and exposure to liberties that must be jointly consumed with them. Individuals have, often, conflicting interests about rights and liberties. A disequilibrium may easily arise because the individuals may hold different expectations about their reciprocal legal positions. This disequilibrium is an ex-ante phenomenon regarding contrasting a-priori claims of the individuals. Ex-post the legal relations that we have considered become identities: one ship x will consume its right to be helped only if the other ship y has fulfilled his duties and x has not been exposed to y's liberty to leave x in trouble. However, ex-ante, the agents may have different beliefs about their respective rights and liberties. It may well happen that x believes that he has the right to be helped while y believes that she has the liberty to leave.

Wasteful positional competition may well occur when the individuals try to enlarge their own sphere of rights and liberties. This conflict is an inevitable aspect of most societies and, in many cases, it has, even, favoured the advancement of civilization. However, legal institutions have also greatly favoured human development by helping to find shared solutions to these contradictions and by aligning many ex-ante expectations about the future interactions of the individuals. According to H. Hart (1961), law-making is a system of second order legal relations that involves the power to change and possibly to align the relations that we have just considered in table one. As Commons (1924) himself, and Hayek (1973) and Fuller (1969) later, stressed, this change does not involve

only the public ordering but also the private sphere. Also in the private sphere, the employers exercise some power and align the expectations of the rights and the duties that the employees have within their firms (Coase,1937).

Also the second order jural relations entail a symmetric "ex-post" correlation between the positions of two (or more) agents. In this case, if the "ex-ante" expectations of the agents are ex-post satisfied, the boundary between the powers and the disabilities of x should coincide with the boundary between the liabilities and the immunities of y (and vice versa).

Table 2: Second order legal relations

Power of x	Liability of y
Disability of x	Immunity of y

For instance if public officials have the power to stop me smoking, this implies that I am liable to their orders and I have no immunity against them which imply that the officials have no disability to give me that order. Second order relations can be used to align first order legal positions. If y has no liberty to smoke, this implies that x is not exposed to his liberty and her right to have x not smoking can be aligned to the corresponding duty of y by x to public officials the power to enforce x's rights. This power implies that y is liable to the authority of the public officials and has no immunity against their actions. When public officials succeed in the alignment of x's and y's legal positions, we have the following table 3 that describes a situation of “legal equilibrium”.

Table 3: Legal equilibrium.

Power of x via p. o.	<------>	Right of x	<------>	Duty of y	<------>	Liability of y via p. o.

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Disability of x via p. o. <------>	Exposure of x <------>	Liberty of y <------>	Immunity of y via p. o.

In a legal equilibrium the broken line separating the rights and the exposures of x coincides with the power and the disabilities that are granted to public officials (p. o.) to enforce her rights. It also coincides with the broken line separating the duties and the liberties of y which in turn coincides with the broken line that defines the boundary between the liabilities and the immunities that y has towards public officials.

However, the broken lines of table 3 do not need to be necessarily aligned. In reality a situation of legal disequilibrium, such as that considered in table 4, may well arise.

Table 4: Legal disequilibrium.

Power of x via p. o.	Right of x	Duty of y	Liability of y via p. o.
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Disability of x via p. o.	----------	Liberty of y	----------
	Exposure of x		Immunity of y via p. o.

In table 4, the broken line, defining the boundary between the rights and exposures of x, does not coincide with that defining the boundary between the duties and the liberties of y. In this case the powers of and the liabilities towards public officials fail to correlate the legal entitlements of the two agents. Ex-ante also the expectations

between power and liabilities can well be divergent and all legal relations can be in disequilibrium. By contrast, a well working legal system, equilibrating the power and liabilities that agents acquire through public officials, tends also to equilibrate their rights and duties or, in other words, tends to achieve the legal equilibrium considered in table 3.

Because of the positional nature of legal relations, legal disequilibrium tends to be an important real-life phenomenon. From Hobbes onwards, political theory has stressed the waste that is due to positional competition when individuals try to enlarge their rights and powers and limit others' individuals liberties and immunities and vice versa. Unlike standard economic competition, positional competition has no self-equilibrating mechanism and complicated legal institutions are required to limit the tendency of each individual to expand its rights and powers at the expenses of the liberties and the rights of the others.

While the Hobbesian tradition has emphasized the vices of unfettered positional competition, the Smithian tradition has emphasized the virtues of competition for the supply of private goods. If legal relations are properly defined, positional competition can be replaced by competition to supply useful private goods. If individuals care about their absolute (not relative) wealth and their legal positions cannot be altered, then they can, only, increase their own welfare by producing goods that are useful for others. In the same vein, the neo-classical Pareto optimality claims of competition can be interpreted as stating the virtues that can be achieved by market equilibria for private goods if the disequilibrium generated by positional competition can be eliminated by the legal system. However, the standard requirement that private property rights are well defined implies itself a complicated set of legal equilibria. The right of ownership is a complex bundle of claim-rights, liberties, powers and immunities[10]. The existence of this bundle of rights involves the establishment of a complicated legal equilibrium. The right of exclusive use of assets by some individuals has to be correlated to the duties of others not to consume these resources and the liberty that the owners have to choose among different uses of the resources is to be correlated to the exposure of others to these liberties. Moreover, the power that the private owner has to transfer her title has to be aligned to the liability that

10 For instance, an owner of land, typically enjoys the claim-right that others not trespass on his land, the liberty to walk on his land, the powers to transfer title to others, and the act of immunity against having his title altered or transferred by the act of another.(Simmonds,1986).

the other agents have towards these transfers of property and the immunity of the owner against having his title altered or transferred by the act of another is to be aligned to the disability of others to perform these acts. The economists' term well-defined property rights conceals a complicated setting institutions that are able to equilibrate conflicting legal positions and overcome wasteful positional competition[11].

As Donato Romano (2006) has pointed out, the fact that legal positions have no self-equilibrating tendency implies that countries may widely diverge according to the nature of their institutions. When, in some developing countries, the equilibrating institutions are lacking economic competition can easily degenerate into wasteful positional competition. Competition can have asymmetric effects in different frameworks.

6. Global Legal Positions and Intellectual Private Property.

Legal positions can involve rights, duties and liberties that involve only relations with our neighbours. They may regard private property rights on well-defined physical objects. In this case, the enforcement can be done "locally" by verifying that others do not interfere with the rights defined over that particular object. The nature of the property of a computer, a car or a house is such that legal relations can be defined at local level. As long as individual does not interfere with the local space occupied by the objects owned by other people, the respect the property rights of others does not limit her liberties. On the other hand, as long the objects that are not visibly taken away or changed by others, an owner can safely assume that his ownership rights are respected. The legal positions, which are involved, have a local domain that is geographically limited by the position is space that, at certain moment time, is occupied by the material object over which the rights are defined. The material character of the good and its defined location imply a possible overcrowding by potential consumers and are a source of rivalry in consumption. When an individual uses the good, others cannot consume it at the same

11 See also Pagano 2006. Nicita, Rizzolli and Rossi (2006) show how, while the has been much literature on incomplete contracts, many rich consequences stem from incomplete property.

level and, in many cases, they are likely to consume zero fractions of them. This circumstance makes these goods very closed to the case of pure private goods considered in the second section (where the fraction t_{ih} of x that can be consumed by other individuals h when i consumes one unit of it is equal to zero). In this case, as long as individual i keeps under control the good x in a given physical location, he can be sure that the other individuals are not consuming it and are not violating its private property. Both the definition and enforcement of private property are defined at local level and they are unlikely to have any relevant implications for the other countries.

Legal positions can also have a global nature. They may involve restrictions for many individuals and potentially for all the individual of the world. Intellectual property rights, such as they are currently defined by the TRIPS agreements and enforced by the WTO, have this nature. Their ownership by some individuals involves restrictions for all the other individuals. To use the terminology introduced in the second section, the legal positions, defining global intellectual property rights are pan-positional goods in the sense that the exclusive rights of an individual or a firm involves duties for all the individuals that are independent of their physical location. The ownership of a house, a car or a field involves some duties for the surrounding individuals who should not interfere with the property rights of the owner and are, only for this reason, limited in the exercise of liberty. By contrast, the ownership of a piece of intellectual property implies that all the individuals in the world have duty not to interfere with its right and their daily actions in all possible locations are limited in multiple ways. If they produce (or in a relevant cases they have already produced[12]) this knowledge, their liberty to use the results of their efforts is limited by the monopoly on knowledge that has been already acquired by other individuals. The right-duty relation acquires a pan-positional character and the right to exclusive use involves the limitation of liberty of many individuals in many countries.

The reinforcement and the extension of intellectual property has been compared to the enclosure of lands that preceded the industrial revolution[13]. Also in this case, commons were turned into exclusive private property. There is however a fundamental

12 An account of cases in which traditional knowledge is stolen by multinationals is given by Shiva (2001).
13 For instance, see Vandana Shiva (2001, pp. 44-48).

difference. In the case of land, the object of privatisation was a local common that involved the legal positions of few individuals. In the case of intellectual property, what is privatised involves the legal positions of many individuals and has major implications for the international standings of the different countries.

Here we have a public-positional good paradox. Because its non-rival nature , unlike land, knowledge can be used by many individuals without decreasing its value. However, the public good nature of knowledge makes its privatisation much more limiting for the liberty of other individuals. It turns a the ownership of a piece of knowledge into a pan-positional right that involves duties for all the other individuals that have little to do with the traditional rights of exclusive consumption of the owners of material objects. The non-rival symmetric nature of the consumption of knowledge becomes, paradoxically, the cause of a sharp asymmetric division. The domain of the rights of some individuals is greatly extended while the range of the liberties of other individuals is dramatically restricted. To use Jefferson's vivid image[14], knowledge is like the flame of a candle that can light many other candles without decreasing its own flame. The exclusive ownership of the flame can only mean that others are deprived of the liberty lightening their own flame. The rival nature of land implies that its private ownership restricts the liberty of non-owners only in the few cases in which it interferes with the (necessarily local) private uses a piece of land. The private appropriation of knowledge cannot imply that the liberty of the non-owners should be only be limited when it interferes with the consumption of the owners: because of the public nature of knowledge, this never happens. Because of non-rivalry, one flame is never the decreasing the intensity of another flame. The nature of ownership is here, necessarily, much more restrictive: it means that non-owners have no liberty to lighten and use their own flames without the permission of the owner (and not simply that they should not decrease the "flame" of the owner as the analogy with land would imply).

The limitation of the costless liberty to use knowledge is inefficient. It is a well-known piece of economic theory that the non-rival nature of a good should not be the cause of an excessive restriction of liberty but rather a reason to grant to all the

14 He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me." Thomas Jefferson, Letter to Issac McPherson, "No Patents on Ideas," 13 August 1813. Sometimes paraphrased as "Knowledge is like a candle. Even as it lights a new candle, the strength of the original flame is not diminished."

individuals the liberty to lighten their own flames. There is, however, also a well-known argument that can support this restriction: if the person that has borne the cost of lightening the first candle is not compensated for this effort perhaps the overall flame of knowledge would be weaker. An appropriate incentive for the inventor requires that she becomes the owner of the knowledge that she has discovered and that the liberty of access of the others is restricted. However, this restriction is always costly: after the first discovery, many other candles could have been lightened, in some cases also independently, without decreasing the flame of the first candle.

The cost of depriving the flame to other candles increases when the knowledge is "basic" in the sense that it comes upstream in the production of other knowledge or it is "complementary" to other pieces of knowledge. For this reason, it is undesirable to subject more upstream or basic knowledge to the restrictions of private property. Since a long time, public institutions like Universities have provided alternative systems of compensating the producers of open-access science. Publications, based on peer reviews, and careers and prizes, based on these publications, are the most typical types of incentives offered by Universities to promote effort and universal disclosure of knowledge. Unsurprisingly, a great deal of their funding has traditionally come from public sources.

Where should one draw the line between more upstream knowledge produced and freely transmitted by Universities and the more downstream knowledge that can be privately owned by its discoverers?

There is no precise answer to this question but we can be sure that, wherever the line lies, it will change when we move from a closed economy ruled by one single state to an open economy with many States.

If we had a benevolent World Government (or, that is the same, a National Government of a State isolated from the World Economy), it would draw the line between the production of "open access knowledge" (funded by tax revenue) and the production of "closed access knowledge" (that is left to the profit-motive of private firms) according to the benefits of its citizens.

However, the real economy, which we face today, is different. No National State can be isolated from the World Economy and no World Governments exists. In this

framework each National State will realise that its citizens get only a fraction of the benefits of the investments in public knowledge while some of them (and all through national taxation) can gain the full benefit of the investments in privately owned knowledge because the latter are not shared with the citizens of the other countries. Thus, in an integrated world economy, characterised by internationally enforced IPR, National States have an incentive to increase the number of "closed access science" research projects over which private property rights are defined and move upstream the line that separates them from the "open access science" research projects. Institutions producing and diffusing public knowledge are increasingly seen as a "waste of money" and there is a widespread tendency to decrease their funding. For the same reason, the same institutions (Universities in the first place) are also under severe pressure to betray their nature of institutions mainly dedicated to the production and to the diffusion of public open-access knowledge and are pushed to dedicate increasing efforts to the production of private intellectual property.

Basic knowledge should be a global common but the presence of TRIPS and the absence of a global cooperation have created an environment with global intellectual private property rights and local national funding for public research. As a result, we face an inefficient over-development of private knowledge and a corresponding an under-development of public knowledge coupled by a very asymmetric development of the different areas of the world. The increasing privatisation of knowledge, which is done by the most advanced countries, turns public goods, shared by all humankind, into private goods characterised by a pan-positional legal right to limit the liberties of the other individuals of all the countries. In this way, an equal and unrestricted liberty of all the individuals of the world to enjoy the benefits of public goods is replaced by a system that constraints the development of local systems of knowledge and creates a sharp asymmetry in the paths of development of the different countries.

As the New Property Rights approach has shown (Hart 1995), private property of the means of production has important incentive effects and a frictionless market for the means of production should imply that they should go to the most capable individuals. However, the market is far from being frictionless and individuals are usually wealth-constrained. For this reason, causation may well work in a self-reinforcing manner also in

the opposite direction: the owners of the means of production have a greater incentive to develop their capabilities and, for this reason, tend to become the best owners. This incentive effect of ownership is much stronger for intellectual property because the right to exclude involves a restriction of the liberty of all the other individuals to replicate similar means of production (Pagano, Rossi 2004). In the case of a machine, an individual, who has learnt to work and possibly to innovate with skills that are partially specific to the machine, is only partially damaged if he is deprived of its use. He keeps the liberty to work with other machines or to build identical machines. The damage is more relevant in the case in which an individual has acquired skills that are specific to a piece of intellectual property and he is denied the access to this piece. The nature of intellectual property implies that he does not keep the liberty to work with or to "re-discover" a similar piece of knowledge. The legal position, concerning an IPR, is global one and involves a pan-positional right to limit the access of all individuals to the use of all the similar pieces of knowledge including those that are independently developed. Turning a public good like knowledge into a private good transforms a universal unlimited liberty into an asymmetric legal position limiting non-owners freedom well beyond the restrictions that stem from the property rights defined on traditional rival goods.

Intellectual private property has had a major role in creating the conditions for asymmetric development and the framework of international economic policy.

Countries at the frontier of knowledge monopolize the most advanced knowledge and, far from sustaining the effort for the provision of a public good that allows the catch-up of other countries, they enjoy a self-reinforcing process of development where the monopolistic ownership of intellectual property encourages the investment in the skills necessary to improve these pieces of knowledge and the skills that are developed make it even more convenient to acquire and produce private knowledge. By contrast other countries may be trapped in an asymmetric vicious circle of (under-)development where the lack of intellectual property discourages the acquisition of skills and the lack of skills discourages the acquisition of intellectual property.

While the countries, which are at the frontier of knowledge, advocate free trade policies, they are specialized in goods whose ownership does almost by definition

involve an internationally enforced barrier to the entry of the other firms. IPR specialized countries enjoy a legal protection barrier that works well beyond national boundaries to include the entire globe[15]. For this reason they can easily advocate the simultaneous enforcement of open markets and intellectual property rights which is the implicit constitution of WTO. This means free trade for majority of goods that are exported by developing countries and closed markets, protected at word level, for most goods produced by the "first world" countries. The global legal positions, associated to private intellectual property create and reinforce the conditions for an increasing asymmetry in the process of development.

7. Conclusion.

The optimistic view for the process of global economic development is usually grounded on economic reasoning focusing on public and private goods. Global public goods, like knowledge, imply opportunities for symmetric development and a distribution of costs favouring the less developed countries. Moreover, since Ricardo, economic theories have emphasized the mutual advantages of trade involving private goods.

While some important criticisms of standard theories can be done referring to standard economic space of public and private goods, this paper has tried to show that enlarging the analysis to positional goods allows a better understanding of the reasons of asymmetric development. Different relations between positional goods and standard forms of economic wealth can explain the underdevelopment of some societies and the overdevelopment of capitalist societies. The existence of reputational goods can explain unequal exchanges and, in particular, those occurring between countries that have high ranked currencies and countries that have low ranked currencies. Positional competition, due to less structured legal relation, can be one of the causes of the asymmetric effects that competition can have in different countries. Finally, the global privatization of knowledge involves a dramatic shift from public goods allowing an equal liberty of use in all the countries to a system of pan-positional rights that restricts the liberty of use everywhere in the world and creates a strong asymmetry between countries specializing

15 On the relation between IPR and antitrust law in an incomplete property rights framework see Nicita, Rizzolli, Rossi (2006).

in immaterial knowledge and the countries that specialize in the production of the standard private goods.

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