

Nicolaïdes, Phedon

**Article — Published Version**

## A theory of regulatory integration

Intereconomics

*Suggested Citation:* Nicolaïdes, Phedon (2006) : A theory of regulatory integration, Intereconomics, ISSN 0020-5346, Springer, Heidelberg, Vol. 41, Iss. 1, pp. 37-43,  
<https://doi.org/10.1007/s10272-006-0170-y>

This Version is available at:

<https://hdl.handle.net/10419/41906>

### Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

### Terms of use:

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

Phedon Nicolaides\*

# A Theory of Regulatory Integration

*Despite the significance of regulatory intervention in EU economies, there is little formal analysis of regulatory cooperation in the integration literature. The following paper attempts to fill this gap by developing a simple model that allows us to consider why member states would want to integrate their regulatory systems, to identify the potential costs and benefits, to shed light on the national features which may influence the determination of the common regulatory values and to analyse compliance issues that arise from the application of international agreements.*

Many of the recent issues of contention in the European Union are about the optimum level and form of regulation and the functioning of institutions that are empowered or encumbered, depending on one's point of view, with the task of ensuring regulatory compliance (recent examples are the 2004 directive on financial services and the virtually suspended draft directive on liberalisation of services in general).<sup>1</sup>

There is near consensus that on regulatory issues cross-border cooperation is useful. The question that arises is what kind of cooperation and how much or how little is appropriate to harmonise national regulatory requirements and procedures.

The problem is that regulation is a complex task and cannot be easily analysed using the typical tools of economic integration such as trade creation and trade diversion. Perhaps this is the reason why, despite the significance of regulatory intervention in European economies, there is surprisingly very little formal analysis of regulatory cooperation in the integration literature.<sup>2</sup> This does not mean that the phenomenon of regulation has been ignored. Far from it. The focus, however, of most theoretical treatment of regulatory issues in the context of integration has been on the role and powers of European regulatory authorities or agencies.<sup>3</sup> This treatment usually presumes that regulatory intervention is necessary and then examines how it is or should be undertaken at the European level. If it does not presume that intervention is necessary, at least it takes as the initial point of its analysis some decision of the member states of the European Union to adopt common regulatory rules. This approach bypasses the fundamental question whether regulatory intervention is necessary in the first place at the national level because it is primarily concerned with how such intervention should be organised at a

supranational level. Yet there is a voluminous literature on the rationale and economic effects, legal context and institutional arrangements of regulation at the national level.

The purpose of this short paper is to fill this gap by developing a simple model that allows us, first, to consider why member states would want to integrate their regulatory systems. Second, it identifies the potential costs and benefits from this type of integration. Third, it seeks to shed light on how and what kind of national features may influence the determination of the common regulatory values. Fourth, it analyses compliance issues that arise from the application of international agreements.

Some of the findings are in line with other models of integration for the simple reason that the effects of integration are broadly similar. Common rules generate gains from increased trade but they also generate costs because collective determination of common rules forces member states to deviate from their preferred level of regulation.

However, some other findings are more novel and unexpected. Even when countries gain from international cooperation, they may still have strong incentives to cheat. Therefore, under these circumstances,

<sup>1</sup> See, for example, Callum McCarthy: EU's Financial Regulators Must Exploit Existing Ties, in: Financial Times, 22 August 2005.

<sup>2</sup> See, however, P. Nicolaides: The Political Economy of Multi-Tier Regulation in Europe, in: Journal of Common Market Studies, Vol. 42, 2004, pp. 599-618; and P. Nicolaides, A. Geveke and A. M. den Teuling: Improving Policy Implementation in an Enlarged European Union: The Case of National Regulatory Authorities, Maastricht 2003, European Institute of Public Administration.

<sup>3</sup> See, for example, G. Majone: Regulating Europe, London 1996, Routledge; M. Everson, G. Majone, L. Metcalfe and A. Schout: The Role of Specialised Agencies in Decentralising EU Governance, report for the European Commission, 1999, accessed at [http://europa.eu.int/comm/governance/areas/group6/contribution\\_en.pdf](http://europa.eu.int/comm/governance/areas/group6/contribution_en.pdf); X. Yatağan: Delegation of Regulatory Authority in the European Union: The Relevance of the American Model of Independent Agencies, Jean Monnet Paper, NY School of Law, 2000, accessed at <http://www.jeanmonnetprogram.org/papers/01/010301.html>; M. Thatcher: Delegation to Independent Regulatory Agencies: Pressures, Functions and Contextual Mediation, in: West European Politics, Vol. 25, 2002, pp. 125-147.

\* Professor of Economics, European Institute of Public Administration (EIPA), Maastricht, The Netherlands. The author is grateful to Adriaan Schout, Helen Oberg, Frank Talsma and an anonymous referee for comments on an earlier draft.

it is necessary to establish supranational systems to ensure compliance.

Both the motives for, and the causes of, non-compliance differ from those usually cited in the literature. In the model in this paper countries do not cheat just because they are forced to accept rules they do not like. The adoption of such rules is voluntary as it is based on consensus. Nor is non-compliance the result of non-coordinated national administrations which agree one thing internationally and apply a different thing domestically. Here, both the entry into international agreements and cheating are rational acts of countries with well-informed and well-functioning administrations. That is why they can predict problems of enforcement and support before the establishment of compliance systems.

These systems are costly and the costs have to be taken into account when considering proposals for the adoption of common rules. However, if public administrations are not perfect, common compliance or oversight systems may enable partner countries to benefit from improved regulatory enforcement even in areas which are not subject to supranational oversight. This phenomenon may be termed "internalities" (since it is the opposite of externalities). It may generate gains even when countries do not benefit much from regulatory integration *per se*.

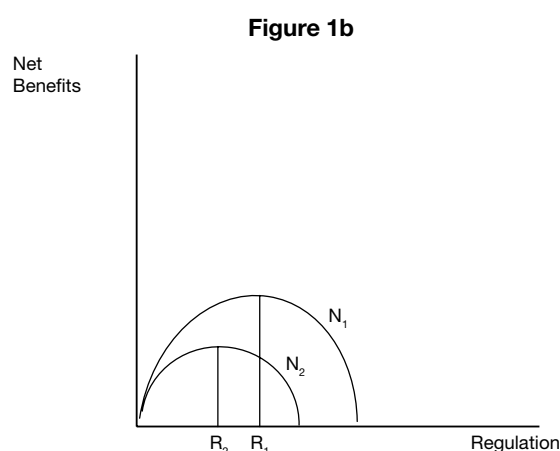
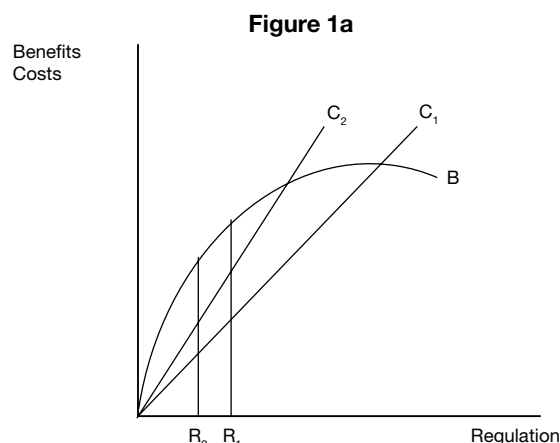
Another surprising finding is that the levels or values of the common rules are not so much determined by the countries that stand to gain more from regulatory integration but by those that experience the most significant losses from regulatory integration. The potential losers play a pivotal role. Moreover, the winners which are likely to be more enthusiastic about integration are surprisingly, under certain conditions, more likely to cheat.

The paper also shows that although cooperating countries can always improve their welfare by deviating from the agreed rules, it does not follow that they are better off without such rules. The possibility for local improvements does not mean that any single country is better off by being completely outside the framework of common rules.

Below, we set the scene by explaining why regulatory intervention may be necessary in a closed economy before going on to consider why two countries may decide to adopt common regulations.

### Why Regulate?

Markets do not always function perfectly. This is the economic justification for government intervention to



regulate markets. As is well known, however, this is a necessary but not sufficient condition. Intervention must be capable of generating more benefits than the costs it causes. Therefore, in order to consider regulatory integration as a rational action later on, we must establish in the first place that regulatory intervention can be rational too. This means that it generates net positive effects for the country as a whole. The distribution of costs and benefits within the country is ignored in this model.

Figure 1a shows how optimum level regulation may be determined. The benefits are indicated by the  $B$  curve and the costs by the  $C$  line. Benefits are measured by

(1)  $B = aR - bR^2$ , where  $R$  is the level of regulation.

Costs are measured by

(2)  $C = mR$ , where  $m$  is a parameter indicating the (constant) marginal costs of regulation.

It is assumed that regulation can be measured in continuous units and that both its costs and benefits start from zero. This is just for expositional simplification.

The optimum level of regulation is derived by maximising the difference between benefits and costs or  $B - C = N$  (= net effect). The net benefits curve,  $N$ , is shown in Figure 1b. Maximisation requires that

$$(3) \quad dN/dR = a - 2bR - m = 0$$

Therefore, the optimum level of regulation is

$$(4) \quad R^* = (a - m)/2b$$

### What Happens When There Are More Firms to be Regulated?

Now it is possible to consider what happens when the costs or benefits change as a result of market integration. The impact of integration can be expressed in terms of more entry by foreign firms or simply more firms being present in the market.

Suppose, first, that integration has no effect on regulatory benefits but causes costs to increase, say, because there are more firms that need to be regulated. This can be shown by  $m_2 > m_1$ , whereby the larger number of firms is expressed in terms of higher marginal cost of regulatory supervision. In this case,  $C_2 > C_1$ , the cost line rotates to the left (shown in Figure 1a) and  $R_2^* < R_1^*$  (shown in both Figure 1a and 1b). Figure 1b shows how the new net benefits curve,  $N_2$ , is enveloped by the old net benefits curve,  $N_1$ .

At first glance, it is paradoxical that when it becomes more costly to regulate, the optimum regulatory value declines. However, on reflection, this is the optimum response because the extra cost per unit of regulation exceeds any extra benefit.

Naturally, whether this happens in reality very much depends on the impact of integration on regulatory benefits. If we assume that the presence of more foreign firms in the national market raises the benefits to be had from regulation, then  $B_2 > B_1$ . If the increase is sufficiently large so that it counterbalances the increase in costs, the level of regulation may remain stable. If the increase in benefits is significantly larger than the increase in costs, the level of optimum national regulation may actually increase too.

The conclusion which is relevant for the purposes of this paper is that the entry of more firms into a regulated market, some of which may be foreign, has an impact on the optimum level of regulation. But this level may go down, as well as up.

This creates a particular problem in an integrating market such as that of the EU. If the benefits from greater integration are spread out across the EU, so each member state enjoys only a small proportion of them, but the costs are primarily borne by each mem-

ber state, then there will be a concomitant decrease in the level of regulation (in whatever way it is measured). Since this is caused by an externality, the outcome is likely to be collectively undesirable. Integration results in a lower level of regulation than the overall optimum.

We see, therefore, that if market entry is equivalent to market liberalisation or market integration, it may lead to more regulation if benefits increase disproportionately to costs and vice-versa. So, the effect of integration can go either way.

### Why Integrate?

Above, integration is taken to be equivalent to market entry. It will now be given a more realistic meaning: common rules. Since a country experiences a net increase in its welfare through regulation, the question that arises is why should it integrate its regulations or regulatory system (assume for the time being that these two are synonymous; this is relaxed later on) with that of other countries and depart from its national optimum? It must gain something in compensation. That compensation is the benefits it derives from increased trade, both imports and exports, due to the fact that its companies save through not having to comply with multiple national regulations. So there is a double benefit here. Fewer resources are expended on compliance while there are more opportunities from trade.

As is well known, countries may also adopt common rules in order to internalise cross-border externalities. In this model, there are no such externalities. The aim of integration is to avoid regulatory duplication and excessive compliance with multiple rules. To put it simply, in a globalised economy, too much national diversity is wasteful. Harmonisation brings about "regulatory economies of scale".

Figure 2a shows the case of two countries,  $M_i$  and  $M_j$ , and their respective net benefits curves,  $N_i$  and  $N_j$ . They consider whether to integrate their regulatory systems by adopting common regulatory values. It is obvious that no country will be willing to accept a level of regulation outside the area where the two curves overlap because they will lose out (net negative effects). Whether there is a value of regulation within the overlapping area that is acceptable to them will depend on whether they can improve on their pre-integration level of benefits as indicated by the maximum points of the two curves.

For ease of exposition, Figure 2b shows only that portion of the  $N$  curve (indicating only net positive regulatory effects) of each country which is adjacent

Figure 2a

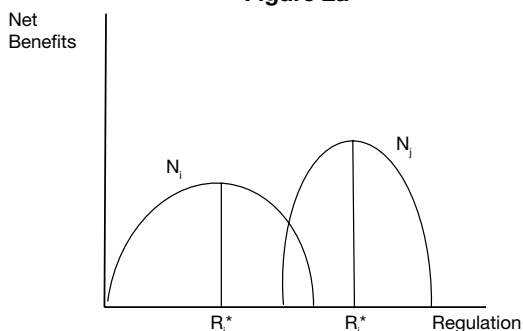
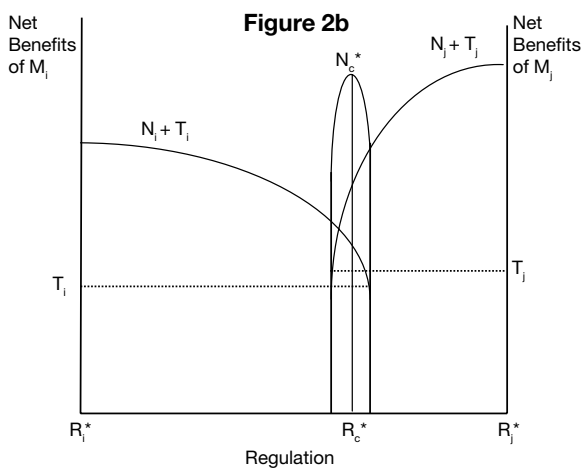


Figure 2b



to the other. Integration enables them to gain from increased trade and investment. In order to obtain these gains they need to harmonise their rules so that their firms are subject to the same rules in both countries. This reduces duplication of regulatory compliance and therefore reduces their costs. As a result, both countries become better off. This positive effect is represented by  $T$  which for now is assumed to be fixed. That is, it has a certain positive value when national rules are the same and a zero value when national rules differ. Therefore, their total benefits are  $N + T$ . In Figure 2b this is shown by the upward shift of the  $N$  curves by the corresponding amount of  $T$ . Country  $M_i$  experiences larger benefits from integration than  $M_j$ .

Naturally, each country prefers that its own rules are adopted as the common rules. This is because, as each country shifts from its pre-integration optimum regulatory level towards the level of the other country, they experience a decline in their net benefits. The final outcome depends on their negotiating strategies. However, the collective optimum is given by the sum of  $(N_i + T_i) + (N_j + T_j)$ . That is,

$$(5) N_c = (a_i R_i - b_i R_i^2 - m_i R_i + T_i) + (a_j R_j - b_j R_j^2 - m_j R_j + T_j)$$

To obtain the value of the common rule that maximises joint benefits, it must be the case that

$$(6) dN_c/dR_c = a_i - 2b_i R_c - m_i + a_j - 2b_j R_c - m_j = 0$$

Therefore the optimum level of common regulation is

$$(7) R_c^* = [(a_i + a_j) - (m_i + m_j)]/[2(b_i + b_j)]$$

It is important to note that the common regulation is some average of the pre-integration regulatory values, but it is not a simple arithmetic average.<sup>4</sup> For  $R_c^*$  to take positive values, the two functions,  $N_i$  and  $N_j$ , must overlap. Otherwise, it will have negative values. This simply means that the two countries must have sufficiently close preferences. If they do not, there is no point in trying to integrate their economies.

But the fact that the common rule maximises collective benefits and the fact that the two countries have overlapping preferences are necessary but not sufficient conditions for the two countries to agree to adopt that common rule. They adopt it only if both obtain more benefits through integration than by regulating alone. Integration must be pareto optimum. The fact that integration generates gains is not enough. It must generate such a large amount of gains so that it can outweigh the cost of shifting away from the pre-integration optimum. This means that a common rule can be adopted only if

$$(8) N_i(R_c) + T_i > N_i^* \quad \text{and} \quad N_j(R_c) + T_j > N_j^*$$

Therefore, a solution exists or, in other words, integration is possible only when preferences overlap (i.e. partner countries are not too far apart) and the post-integration benefits exceed the pre-integration benefits ( $N(R_c) + T$  is the post-integration benefit).

Let us now consider the factors that determine the common value of regulation,  $R_c^*$ . In the real world this collective rule setting may very well be dependent on the negotiating skills of each side.

In the context of this simple model, the maximum of function  $N_c$  is determined by the shapes of functions

<sup>4</sup> As mentioned earlier, in reality the agreed value of regulation is the outcome of negotiations. Whether it is equivalent to the collective optimum depends on how the negotiations are conducted. In P. Nicolaidis: *The Political Economy ...*, op. cit., I showed what happens when negotiations are conducted on the principle that each side concedes in equal terms. Then the outcome is unlikely to be optimum. This in turn has two consequences. First, it necessitates the adoption of general regulatory principles rather than detailed rules. It is easier to reach agreement on principles. Second, if the optimum cannot be achieved through negotiations, then side-payments may be a necessary second-best. Given the difficulty of achieving the theoretically optimum level, it is important that an independent entity such as the European Commission frames the negotiations through proposals that promote the collective interest.

$N_i$  and  $N_j$ . If they are relatively flat partner countries experience smaller losses by deviating from the pre-integration national optimum. If the two functions are relatively steep, the losses from shifting away from the national optimum are correspondingly larger. This means that the common rule is closer to the preferred option of the country with the steeper curve.

This conclusion can also be expressed as follows. The outcome of the deliberations on common rules is more decisively or effectively determined by the country that has the most to lose from integration. This makes intuitive sense. The country that loses out will naturally resist any change. The country that is not very much affected by a different rule will not try hard to prevent it.

By contrast, the size of the gains from the common rule,  $T$ , has no decisive effect on the value of the common rule. It can also be seen from equation (6) that it drops out of the calculations. This is because  $T$  was assumed earlier to be invariable with respect to the level of regulation,  $R$ .

This assumption can now be relaxed and  $T$  can be expressed in terms of

$$(9) \quad T_i = K_i + t_i(R_i^* - R),$$

where  $K$  is the maximum amount of gains from trade when  $R_i^* = R_c^*$  or when national rules are universally adopted, and  $t$  is a parameter that captures the impact on benefits from trade as national rules deviate from the common rule.

Please note that this expression applies for country  $M_i$ . Since in relation to the net benefits function  $N_j$  for country  $M_j$  the movement is to its left, and not right, this equation would have to be  $T_j = K_j - t_j(R_j^* - R)$  for that country.

Equation (7) then becomes

$$(10) \quad R_c^* = [(a_i + a_j) + (t_j - t_i) - (m_i + m_j)] / [2(b_i + b_j)]$$

By differentiating  $R_c^*$  with respect to  $t$ , say  $t_i$ , we obtain

$$(11) \quad dR_c^*/dt_i = -1/2(b_i + b_j) < 0$$

This says that  $t$  and  $R_c$  are inversely related. Other things being equal, the larger the reduction of trade caused by a deviation from the pre-integration level of regulation, the closer the common rule must be to that pre-integration level. This is because  $t$  changes the slope of the  $N$  function and makes it steeper.

Once more we see that the determining factor is the cost incurred by each country when deviating from Intereconomics, January/February 2006

its pre-integration optimum. The size of the absolute gains from trade are not so decisive.

In negotiating terms, the outcome is shaped by the losers. The countries which are enthusiastic about integration because they gain a lot from trade are more willing to make concessions. Hence they have a less important determining role on the final outcome.

### Need for Effective Regulatory Enforcement

In the model developed in this paper, the proper application of regulations becomes an issue for two reasons. First, the entry of more firms raises regulatory costs and leads to a lower level of regulation, even if national rules differ. Second, when national rules are harmonised, each country has an incentive to deviate from the agreed rule. This is because each country can become better off by "cheating" and getting closer to its preferred optimum.

Regulatory compliance is, therefore, a problem that needs to be solved. In the EU literature, non-compliance or mis-application of European rules is typically explained on the grounds that member states are out-voted in the Council or that national administrations are inadequately coordinated or endowed.<sup>5</sup> In this model non-compliance or cheating is a rational act and not a failure. In the following this assumption is relaxed and it is considered what the effect of supra-national oversight may be.

Indeed, we can surmise that the typical solution to this problem would involve some kind of surveillance or oversight. The model indicates the need for a compliance mechanism but cannot tell us how compliance is achieved. However, the model can show what happens when the effects of compliance are taken into account.

If the meaning of the term regulatory integration is expanded to include not just common rules but also common institutions, the formula of the costs and benefits of integration must also change. It must now include the cost of establishing common institutions the function of which is, presumably, to oversee the proper application of the agreed rules. The formula now is

$$(12) \quad N = (B + T) - (C_N + sC_C)$$

where  $C_N$  is the national regulatory cost and  $sC_C$  is the share of the common regulatory cost that is borne by each partner country.

<sup>5</sup> Cf. J. Vervaele: Compliance and Enforcement of European Community Law, The Hague, 1999, Kluwer.

This equation can also be expressed in terms of  $R$  as follows

$$(13) \quad N = B(R) + T - m_N R - s n_C R$$

where  $m_N$  and  $n_C$  are the marginal national and common costs, respectively, of regulation (assumed to be constant).

The larger the common costs, the smaller the net gains from integration. Indeed, if the policing of the common rules is too costly or too difficult, no country would have an incentive either to enter into the agreement in the first place or to stick to the agreed rule afterwards.

Also, if it is assumed that common costs are allocated according to the size of the country or the level of income of the country, it follows that smaller or poorer countries derive proportionally larger gains from regulatory integration, *ceteris paribus*. On the other hand, larger countries may be able to reap proportionately larger gains from trade.

The above examined which country has the most decisive role in framing the agreement on common rules. Before concluding here, it is instructive to consider which country has the strongest incentive to break the rules.

If the countries behave rationally, as has been assumed all along, they will deviate from the agreed rule up to the point where the gains equal the cost of being detected times the probability of detection. Let us indicate the gain from deviation as  $Bx$  and the cost of deviation as  $P(R)Cp$ , where  $P$  is the probability of detection and  $Cp$  is the cost or penalty of punishment.

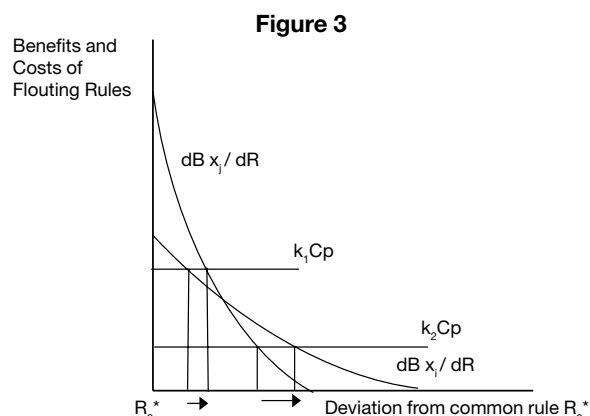
We can reasonably surmise that  $P$  is directly proportional to the magnitude of the deviation from the agreed rule, so that  $P = k(R_c^* - R)$  where  $k$  is a constant. Also the penalty can be assumed to be positive,  $Cp > 0$ , but constant (i.e. there are consequences or penalties from the infringement of rules but these penalties do not change according to the gravity of the infringement. Indeed, in the EU member states which are repeated offenders are not subjected to harsher penalties).

It follows that the optimum flouting of the rules by each country is given by the value of  $R$  that maximises the difference

$$(14) \quad Bx - k(R_c^* - R)Cp$$

By differentiating with respect to  $R$  and setting the result equal to zero, we obtain

$$(15) \quad dBx/dR = -kCp$$



The optimum degree of deviation is reached when the net extra gains from cheating equal the extra cost of detection.

Figure 3 presents two different possibilities for two different values of  $k$ . If the value of  $k$  is high enough (i.e. there is a good detection or surveillance system), the largest deviation from the common rules will be attempted by country  $M_j$  (the country with the steepest  $N$  curve). The same happens when the costs of punishment are large enough.

However, the picture is different when the probability of detection is low or the cost of punishment is low. Then, the country with the largest deviation from the agreed rule is  $M_i$ , i.e. the more pro-integration country.

Two conclusions may be drawn on the basis of the above analysis. First, whether a country is an integration enthusiast or sceptic does not really matter. The determinant factors are the potential gains and penalties from infringements. Second, and more broadly, most common rules are likely to be imperfect policy tools for most partner countries. This means that deviations from the agreed rule are likely to bring about local improvement or some gains.

However, it cannot be argued that, in general, countries are better off without rules rather than having ill-fitting rules. Breaking the rules need not lead to global improvements even if it brings about local improvements. Although such generalisations may be appealing politically, they are false.

#### Common Institutions and "Internalities"

There may also be an unintended "bonus" from the establishment of a common system to oversee regulatory compliance. This bonus is in the form of the potential gains from strengthening or improving the national regulatory institutions. This may be called

“internality” to distinguish it from the more well-known phenomenon of cross-border externalities.

One of the typical reasons cited in the literature as motivating integration or cross-border cooperation is the elimination of diverse international externalities ranging from pollution to monetary stability. International cooperation is necessary because the actions of one country have an impact outside its territory and negatively affect other countries. In policy areas where no externalities are present, argue the proponents of national regulatory independence, no integration or cross-border cooperation is necessary. Of course, they are right if indeed no externalities exist.

However, if national regulatory systems are subject to scrutiny by a common institution, it is well possible that the performance of national regulators improves not only in relation to the common rules they enforce but also in relation to purely domestic rules. This is likely because there are significant spillovers of good practices within the same organisations. It is unlikely, for example, that the same financial regulator deals with multinational banks fundamentally differently than with domestic banks. While the issues considered in each case may indeed differ both in number and level of detail, the regulators are likely to have, for example, the same skills in calculating risk.

Therefore, an unexpected benefit from integration is that institutional enforcement and improvement spreads to areas outside the scope of application of the common rules. As countries normally would not consider integration for the purpose of dealing with purely domestic issues, this effect may be termed “internality”.

It is important to take into account such effects when evaluating integration processes for the simple reason that they are probably ignored by those who negotiate the common rules in any specific policy area. They are not normally concerned with enforcement outside their own fields of responsibility. But if the assessment of integration is to be complete, it should not ignore them. The formula now for the benefits and costs of regulation must be expanded and can be expressed as follows

$$(16) \quad N = B(R) + T + X - m_N R - s_n c R$$

where  $X$  is the gain from the improved effectiveness of regulation due to the establishment of a common regulatory institution.

Naturally, the question that arises is how strong or extensive are the spillover effects from one policy

area to another. This is an empirical issue that, as suggested later on, can be subjected to testing.

## Conclusions

Despite its simplicity, the model developed in this paper allows us to derive some rather rich and surprising conclusions.

First, like in many other models of integration, the benefits emanate from increased opportunities to trade while the costs are caused by the fact that collective decision-making forces partner countries to accept nationally sub-optimum solutions.

Second, the common regulation that maximises the sum of national net benefits is determined by the size of the losses from deviating from the pre-integration optimum regulation. Absolute gains from trade matter less than the rate at which such gains are forgone when countries deviate from their pre-integration level of regulation.

Third, any international agreement that results in nationally sub-optimum outcomes is vulnerable to “cheating”. It is perfectly possible that countries voluntarily enter into collective agreements and, at the same time, fail to comply with them or try to cheat. These agreements need to be supported by institutional measures to ensure compliance.

Fourth, the extent of cheating depends not on the size of gains from trade but on the gains from getting closer to the pre-integration optimum and on the probability of detection and the size of penalties.

Fifth, there are also costs in the collective decision-making itself. However, the establishment of a supra-national system to oversee regulatory compliance may generate benefits if it improves the effectiveness of national regulatory enforcement processes (the  $X$ -factor). This means that a country may gain from regulatory integration, even if the gains from increased trade are relatively small.

Sixth, and more generally, the possibility that each country can obtain local gains from small deviations from agreed rules does not necessarily imply that each country is better off without such rules.

In a nutshell, a country that gains nothing from regulatory integration is one that trades very little, has extreme policy preferences and has perfect institutions. In all other cases, we should expect that regulatory integration would generate some benefits, that, of course, have to be set against potential costs before we can conclude that this kind of integration improves on independent regulatory intervention.