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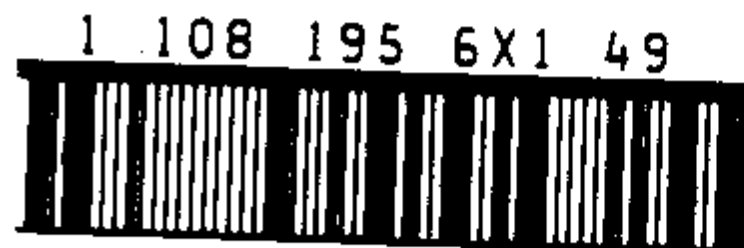
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SMUGGLING UNDER THE CAP: NORTHERN IRELAND AND
THE REPUBLIC OF IRELAND, 1974 - 1982

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SMUGGLING UNDER THE CAP:

NORTHERN IRELAND AND THE REPUBLIC OF IRELAND, 1974 - 1982 *

Desmond A.G. Norton

1. INTRODUCTION

The Common Agricultural Policy (CAP) of the EEC, formulated in the late 1960's, ostensibly created a system which rested on three fundamental cornerstones:

(i) Common organization of markets and joint financing of support measures. In essence this meant that the same prices were to be guaranteed to food producers across the Community. The only differences between market prices (it was intended) would be accounted for by transport costs and differing markups as produce moved from surplus to deficit areas.

(ii) Free trade between Member States. As stated in the preamble to the fundamental beef and veal sector Regulation 805/68, "the establishment of a single market in beef and veal involves removal at the internal frontiers of the Community of all obstacles to the free movement of the goods in question".

(iii) A single system of tariffs and export subsidies applicable on trade with non-member countries.

It is obvious that if a common market in agricultural produce, along the lines just outlined, really existed, there would be no

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incentive for smuggling agricultural produce within the Community. In fact, such a common market has not existed since, along with the UK, Ireland entered the EEC in 1973. The agri (or green) monetary system of the CAP, along with its associated network of monetary compensatory amounts (MCA's), is the central reason for the non-existence of a common market in agricultural produce. Thus substantially different guaranteed and market prices have prevailed in EEC countries. Cross-border taxes and subsidies -- MCA's -- were introduced with the intent of preventing traders from gaining from, or being harmed by, such price differentials. In practice, however, traders have exploited the opportunities arising from the price differences by smuggling CAP products. That has been especially the case in trade between Northern Ireland (NI) and the Republic of Ireland (RI).

* Official CAP prices (intervention prices, etc.) have been set, not in terms of national currencies, but in terms of the Unit of Account until March 1979 and in terms of the European Currency Unit (ECU) since then. Thus the ECU is the numeraire of the CAP's pricing system. In terms of national currencies, official CAP prices are reckoned as: (price in terms of the numeraire) multiplied by (exchange rate for agricultural purposes between national currency unit and the numeraire, ie., the number of units of national currency equal in value to one unit of the numeraire). The expression in the second set of parentheses denotes the "green" or representative rate for a currency.

Market exchange rates within the EEC have varied since RI and the UK entered the EEC. However, green exchange rates have not always

been adjusted in line with market exchange rates. Instead, periodic changes in green exchange rates were made, following in lagged fashion changes in market exchange rates. The gap between the green and the market exchange rate has been bridged by MCA taxes and subsidies. For weakening currencies, where the market exchange rate has depreciated relative to the green rate, MCA's have operated as a tax on exports and a subsidy on imports (the case of negative MCA's); vice versa in the case of strengthening currencies, where the market exchange rate has appreciated relative to the green rate (the case of positive MCA's).

Because the UK and Ireland had the same market exchange rates and because their green rates were also the same over the period January 1973 to September 1974, no MCA was then implemented on CAP produce trade between them. However, the green rates for both the Irish pound and sterling were devalued with effect from 7th October 1974. And because the devaluation of the RI green rate exceeded that of sterling, CAP product prices in RI increased by over 3% in excess of CAP product prices in the UK. That meant that MCA's were introduced on trade in such products between NI and RI. These took the form of net subsidies on RI's CAP product exports to the UK, and net taxes on flows in the reverse direction.

Sterling and the Irish pound continued to depreciate against other EEC currencies in the years following the October 1974 green pound devaluations. Reflecting her own interests as a large net exporter of CAP products (and hence favouring high food prices) RI mirrored the (market) depreciations of the Irish pound by way of a lagged sequence of green pound devaluations. However the UK, also reflecting

her own interests -- as a large net food importer (and hence favouring low food prices) -- resisted pressures from the EEC Commission to devalue the green rate. The result was a calculated MCA rate of subsidy of about 25% on RI CAP exports to the UK throughout 1977; the rate of tax on movements in the reverse direction was also about 25%. This situation simply reflected the fact that, in terms of national currencies, official CAP product prices were then about 25% higher in RI than in the UK.

Between October 1974 and early 1980, MCA's on RI/UK trade took the form of net subsidies on RI exports to the UK and net taxes on flows in the reverse direction. However, because of its appreciation, sterling has ^{usually} been a positive MCA currency since early 1980. RI, on the other hand (because she has kept her green rate approximately equal to her market exchange rate against the ECU) has been a zero-rated MCA country in recent years. Hence, since early 1980, MCA taxes have been levied on RI CAP product exports to the UK, whilst subsidies have applied on movements in the reverse direction. These have merely reflected the percentage excess in the official CAP product price level in the UK over the corresponding price level in RI, in terms of national currencies and using market exchange rates.

The principal objective of the present paper is to assess how the exchange rate changes described above, combined with the application of MCA's, affected recorded trade in CAP products between RI and NI, January 1974 to December 1982. Since the main focus will be on the impact of illegal trade, tentative estimates of induced smuggling activity are also provided.

2. GREEN EXCHANGE RATES, MCA'S AND TRADE FLOWS

(2. i). Other Studies

There have been a number of studies in recent years in regard to the manner (if any) in which the green currency system and MCA's have influenced trade flows within the EEC. Those studies can be summarized as follows:

Two official EEC studies¹ have argued that the prolonged use of MCA's causes distortions in trade: Since non-agricultural input prices reflect normal market exchange rates -- if a country devalues, those input prices rise -- the MCA system discourages production in weaker currency countries. That is because if a country devalues its market exchange rate, but not its green rate, output prices measured in terms of local currency will not rise. Profit margins will be squeezed and the incentive to produce and invest in CAP product lines will be reduced. The reverse would occur in strong currency countries which revalue their market exchange rates (thereby reducing non-agricultural input prices) but not their green rates. Hence, the Commission argues, MCA's encourage a perverse development of intra-Community trade -- from high-price positive MCA countries to low-price negative MCA regions.

In 1978 Loseby and Venzi applied revealed comparative advantage and constant market shares analyses to the intra-EEC export data of France, Germany and Italy for 8 groups of agricultural commodities over the three year period 1972/3 to 1974/5. Their conclusion was that their results "appear to support the hypothesis that MCA's have acted in favour of the exports of the strong

currencies, as well as providing evidence that the exports of weak currency countries have experienced a loss of competitiveness, particularly when they were subject to strongly negative MCA's"². A more recent paper by Strauss appears to concur with the above views: on the basis of data for 1973 to 1981, he notes that "on balance there has been a trade flow from countries with positive MCA's and into those with negative MCA's."³ However the latter finding does not establish any unique causation: as Ritson and Tangerman have noted⁴, a net exporting country may aim for high domestic farm product prices (and hence aim to have zero or positive MCA's) and a net importing country may aim to have low farm product prices (and hence aim to have negative MCA's).

There can be no doubt that the application of the MCA system has affected competitiveness of individual countries in specific product lines -- particularly in the case of processed foods. Consider for example the RI beef processing industry in the later 1970's. Canned and other cooked meats have never been subject to the MCA system; however their raw materials (unprocessed or frozen boneless beef) have. These considerations, allied to the fact that when in the later 1970's sterling and the Irish pound were depreciating, RI kept her green rates more in line with her market exchange rates, meant that RI canned beef lost in competitiveness relative to UK canned beef. Throughout most of 1977 and 1978, the net MCA subsidy (tax) on RI CAP exports (UK exports) to the UK (RI) averaged around 25%; that merely reflected the fact that in terms of national currencies, official CAP product prices were about 25% lower in the UK than in RI. Thus UK meat canners could obtain their raw materials at substantially lower costs than their RI counterparts.

Because no MCA tax or subsidy was applicable on the final canned product to offset the cost differentials, RI canners found themselves hopelessly cost non-competitive in the UK market and in RI itself. UK canned beef therefore flowed onto the RI market while RI export markets were lost and canning lines were closed down in RI meat plants. The opposite situation applied when sterling became a positive MCA currency in the 1980's⁵. Similar remarks (ie., application of MCA's to raw materials, but not to the final product) applied to the RI competitiveness position in biscuits, jams and chocolate in 1976 and early 1977.

A few researchers have noted that the MCA system increases the scope for illegal trade within the CAP. Thus Strauss⁶ remarked that "CAP goods have been smuggled from countries with large negative MCA's to countries with smaller negative, or ... positive MCA's.... Often the same goods have been re-imported, this time quite openly, collecting the MCA refund." It follows that to the extent to which such illegal activity is of any significance, the CAP product exports of weaker currency countries will be underrecorded while those of stronger currency countries will be overrecorded, and studies which attempt to assess the impact of the green currency system and MCA's on actual trade flows should take such illegal activity into account⁷.

(2. ii). RI and NI Trade

In what follows we concentrate on trade between RI and NI. Given the levels of national production, changes in MCA rates would not in themselves induce changes in recorded trade if all trade were through legal channels. That is because MCA border taxes and subsidies simply bridged the gap, in terms of national

currencies and using market exchange rates, between official CAP product prices in RI and NI. Thus, assuming that all trade would be through legal channels, they sought to nullify the incentive to move goods across the border merely because of different official CAP product prices in the two parts of the island.

The agri-monetary system has consistently caused large-scale smuggling between RI and NI. Thus, when MCA subsidies were obtainable on RI exports to NI (as from October 1974 to early 1980, reflecting higher CAP prices in RI), RI exports went through legal channels and were therefore recorded; indeed, they tended to be overrecorded due to the multiple running of the same goods across the border. (The goods would be exported legally to NI thereby collecting the subsidy, then smuggled back into RI evading the tax, then exported once more through customs obtaining another subsidy, etc., etc. -- the so-called carousel). At the same time there was a symmetric tax on RI imports from NI; thus RI imports were underrecorded, due to smuggling inwards. When MCA taxes were applicable on RI exports to NI (as has been the case since early in 1980 reflecting higher CAP prices in NI than in RI) one would expect that RI exports would be smuggled into NI, and would therefore be underrecorded. Symmetrically, an MCA subsidy would then be applicable on RI imports from NI. Thus RI imports would be recorded; indeed, they would tend to be overrecorded due to the carousel (multiple claiming of MCA subsidies on movements southwards, combined with multiple smuggling of the same goods out of RI into NI).

The evidence in support of the above assertions -- largely based on monthly data for the period January 1974 to December 1982 -- is presented in subsequent sections. For given cattle and pig herd sizes, and for given levels of barley output, if all trade were through legal channels the MCA system should not be able to explain much of recorded trade in those goods. To the extent to which it does so it is attributed to illegal activity: it was in that manner that smuggling activity was estimated.

3. TRADE IN LIVE CATTLE

(3. i). Market Organization

The Guide Price for fat cattle is the key to the EEC price support system in the beef and veal sector. In itself, it has no mandatory force: it is the average price (in ECU's) which it is felt should be realised throughout the marketing year for fat cattle sold for slaughter. Each week average wholesale or reference prices for adult cattle are collected. Subject to qualifications, the relationship between Guide and reference prices has determined whether intervention support was available. An Intervention Price for live cattle has been set for each marketing year at levels slightly below the Guide Price. Market prices have been regulated by intervention operations, by the Common External Tariff and variable import levies, by export subsidies and by EEC aids for the private storage of beef at times of surplus.

The application of the CAP's price support system in the beef and veal sector has been far more complex than the above details might suggest. Of particular relevance in the Irish context

have been the Variable Premium (VP) System developed by the UK largely as an alternative to intervention, and subsidies at point of slaughter under the Meat Industry Employment Scheme (MIES), introduced in NI to counter smuggling activity which the agri-monetary system actively but unintentionally encouraged.

(3. ii). VP, MIES and Smuggling⁸

Although RI has made very heavy use of the intervention system, the UK has done so only to a marginal extent. Rather, as from November 1974, the UK has used the VP system. It was and still is a system of deficiency payments, made to producers around time of slaughter, under which target prices for fat cattle have been set on a weekly basis; if the average weekly market price was less than the weekly target price, a VP was paid to fill the gap. The details of the system were such that when a VP was payable in the UK over the 1974 - 80 period, the rate of payment was generally higher in NI than in Great Britain (GB). At the same time, RI beef exported to the UK was eligible for the VP applicable in GB only. The difference in the VP payable to NI and RI meat factories became a point of contention between NI and RI interests, because it created problems for RI processing plants in competing for cattle on the RI market, and diverted cattle into NI for slaughter there.

In the period October 1974 to 1976, and prior to the build-up of MIES slaughter subsidies in NI (mainly in 1977 -- see below), RI cattle going to NI went through legal channels (because net MCA subsidies applied). But the MCA system also greatly encouraged the movement of cattle from NI to RI through illegal routes (because net MCA taxes applied on legal trade in order to

nullify the attractiveness of higher, in terms of national currencies, official CAP product prices in RI). Thus it appears that there was large-scale unrecorded movement of cattle southwards in 1976⁹. To prevent the illegal drain southwards of NI herds induced by the agri-monetary system, the UK reacted by introducing large subsidies under the MIES on cattle slaughtered in NI, as from 25 October 1976¹⁰. The operation of the MIES was investigated by P. A. Management Consultants (PAMC) who presented their report¹¹ in February 1977. Much of that report concerned the probable effects of the agri-monetary system in the absence of a MIES-type subsidy system.

Reflecting the higher prices obtainable in RI, legal movements of cattle from NI to RI attracted MCA levies standing at about £60 per head for fat cattle in January 1977. In the view of PAMC and in the absence of MIES-type measures in NI, "there is little doubt that a large proportion of available Northern Ireland supply would move South.... It would be unrealistic to assume that such illegal movements could be halted given this level of incentive.... If cattle can be moved in lots of 30 head, the present (NI slaughter) throughput levels of approximately 7,400 cattle per week would require some 250 movements. This is equivalent to approximately 36 movements per day, or less than two per hour across the border. Given the length of the land border ... this extent of movement is considered feasible The machinery exists, or could be rapidly brought into existence, to smuggle the whole production of cattle and pigs to the Republic." (pp. 3, 39, 40). In regard to future policy, for as long as there was an MCA wedge operating as a net subsidy on RI exports to NI and as a net tax on movements in the reverse

direction, PAMC concluded that "the MCA's have distorted the legal export trade, and the MIES has prevented the development of large-scale smuggling The removal of the MIES would result in extensive illegal movements of fat cattle and pigs to the Republic. The Northern Ireland export trade in both beef and pigmeat would virtually cease within a short time, probably a matter of weeks Smuggling would rapidly become a highly developed illegal industry if the MIES were removed." (pp. 54, 56, 57). PAMC accordingly recommended that the MIES be retained.

Following the PAMC recommendations, the MIES was extended from time to time so that it was in operation almost continuously until January 1980, when both RI and the UK had zero MCA's. Throughout the period the rate of subsidy payable under the MIES approximated the calculated MCA, which in turn reflected national currency CAP price differentials between RI and the UK. That remained the case even after MCA's on live cattle in trade between NI and RI were suspended in 1977 (see below).

We have seen that by the spring of 1977 RI cattle going to the UK obtained very large MCA subsidies. However they were also entitled to receive the NI MIES after completing a domiciliary period in NI. (GB did not have a MIES). These factors in combination created an artificial demand for the export of store cattle from RI to NI -- a reversal of net trade flows -- and put RI meat plants at a disadvantage in obtaining their raw materials: the deflection of RI cattle for finishing in NI left RI meat plants (rather than their NI counterparts as previously) drained of supplies. The EEC's response to this

situation was by way of Regulation 1260/77 of 13 June 1977, under which MCA's on trade in live cattle between NI and RI were suspended for as long as the MIES was operated in NI.

The MIES in NI was endorsed by the EEC so as to counter drains on NI cattle herds into RI which the higher official CAP prices in RI would have otherwise induced, mainly by way of smuggling, thereby evading the MCA charges which were meant to prevent such deflections. As sterling appreciated in the late 1970's, local-currency-equivalent official CAP prices in NI and RI converged, thereby tending to obviate the rationale for the MIES in NI. Due to adjustments in its green exchange rate, RI has maintained a zero MCA since late in March 1979. However throughout most of 1979 RI exporters still obtained an MCA subsidy (other than where it was suspended, ie., on the live cattle trade with NI) on exports to the UK. The appreciation of sterling led to the removal of all UK MCA's in the beef and veal sector as from 28 January 1980. Since then no slaughter subsidies under the MIES have been payable; therefore MCA's on trade in live cattle between NI and RI have no longer been suspended. And since 28 April 1980 the UK has generally had positive MCA's.

The switch from negative to zero and then to positive MCA's in the UK meant a complete reversal of the scenario applicable in the 1974 - 77 period: RI exports to NI now faced MCA taxes reflecting higher official CAP prices in NI than in RI in terms of local currencies, given market exchange rates. Symmetrically, subsidies were available on NI exports to RI. Thus the direction of smuggling reversed completely: strong incentives now emerged

to smuggle cattle for slaughter in NI. Partly because of this the RI processing industry was drained of supplies and was forced onto a 3-day working week for much of 1981.

(3. iii). MCA's and Smuggling of Live Cattle: Empirical Estimates

For a narrative of the development of cattle smuggling between RI and NI, 1974 to 1981, and for some details on the modus operandi of the smugglers, see Norton¹², Chapter VII. Much of the focus in that study was on the year 1981. MCA taxes on RI cattle exports to NI (and subsidies on movements in the reverse direction) then averaged 10.5% over the year. Estimates of induced smuggling are high. The Irish Livestock and Meat Board estimated in its Annual Review of 1981 (p. 1) that between 110,000 and 140,000 cattle had been smuggled northwards in 1981. The relative magnitude of this estimate can be seen by noting that recorded live cattle exports to all markets in 1981 came to 425,000 head. Thus, according to the Irish Livestock and Meat Board, over 20% of all live cattle exports from RI in 1981 were smuggled into NI.

The agri-monetary system does not just cause smuggling within an existing volume of trade but also causes deflection of trade from one market to another. Large-scale smuggling ex RI to GB or continental EEC is an operational impossibility. But in the case of RI and NI, "this frontier is difficult to patrol and gives scope for clandestine trade There is a single market in live cattle in these regions owing to their structural, geographical and political circumstances."¹³ Thus in years such as 1981, the MCA system presumably caused market distortion

by deflecting RI cattle away from the GB and continental markets and into NI; however, by its very nature, such deflection would not have been recorded in the RI/NI trade statistics.

On a priori grounds we expect that an increase in MCA taxes on RI exports to the UK will cause an increase in actual RI exports to NI but a decrease in recorded exports to that market, whereas, on the other hand, MCA subsidies on RI imports will generate an increase in recorded imports to RI from NI. However, in order to test these propositions in the light of empirical data we need to relate recorded cattle movements across the border to most of the possible principal determinants of such movements. The following are regression estimates¹⁴ for recorded RI/NI trade in live cattle using monthly data for the 108 month period January 1974 to December 1982, inclusive:

$$\begin{aligned}
 X = & \text{constant} + 187S + 9CS - 41CN + 119V + 52I - 22RM \\
 & (2.1)^* (1.5) (-1.3) (1.3) (1.4) (-0.4) \\
 & - 52XS + 5E \\
 & (-1.0) (0.1)
 \end{aligned}
 \qquad R^2 = .52$$

$$\begin{aligned}
 M = & \text{constant} - 247S - 8CS + 52CN - 3,418CEU - 20I + 107RM \\
 & (-3.2)^* (-1.5) (1.7)^* (-1.5) (-0.6) (2.7)^* \\
 & R^2 = .56
 \end{aligned}$$

Note: t-statistics are in parentheses. * denotes statistically significant at the 95% level on the basis of a one-tailed test (as is appropriate). This note also applies to the subsequent regressions.

The variables are defined as follows:

X : Number of cattle recorded as being exported from RI to NI.

M : Number of cattle recorded as being imported to RI from NI.

- S : Net MCA percentage subsidy on RI cattle exports to NI and the symmetric tax on RI imports from NI. This variable had a negative value at times when RI exports to NI were taxed (since a tax is a negative subsidy).
- CS : Cattle herd, numbers (000), in RI at beginning of year.
- CN : Cattle herd, numbers (000), in NI at beginning of year.
- V : Excess of the NI rate of VP over the GB rate of VP, as a percentage of the NI reference price.
- CEU: Dummy variable representing certification of end-use. Equals 1 for July 1981 to December 1982. This was introduced to prevent carouselling ex NI into RI.
- I : Excess of RI intervention price over NI reference price, in terms of £ sterling using market exchange rates, as a percentage of the NI reference price.
- RM : Rate of subsidy in NI under the MIES, as a percentage of the NI reference price.
- XS : Net export refund on adult cattle, RI to North Africa, as a percentage of the RI reference price.
- E : Excess of EEC reference price over RI reference price, as a percentage of the RI reference price.
- NOTE 14

The variables S, CS, and CN have their expected signs in each equation. However, only one variable -- S, the percentage rate of net MCA subsidy on RI exports to NI and the symmetric tax on RI imports from NI -- had its expected sign and was also statistically significant in both equations¹⁵. According to these estimates:

(i) Every 1% of net MCA subsidy on RI exports to NI over the period January 1974 to December 1982 induced increased recorded exports of about 187 RI cattle per month to NI, while, symmetrically, every 1% of net MCA tax on RI exports to NI over the same period induced reduction in recorded cattle exports to NI of about 187 per month. For cattle herds of given sizes, there is no reason why actual RI cattle exports to NI should

systematically fall when the rate of MCA tax increases, since an increased rate of tax simply reflects an increase in official CAP product prices in NI relative to those in RI. However, the increased MCA tax would imply increased profitability of exporting cattle through illegal channels: thus we conclude that on the basis of 108 monthly observations for 1974 to 1982, every 1% of MCA tax on RI exports generated smuggling of about 187 cattle per month from RI into NI.

The relative significance of the estimate of 187 can be seen as follows: Taking for example the year 1981, recorded RI cattle exports to NI were 91,356 head. The average rate of MCA tax on RI exports to NI was then 10.5%. The monthly estimate of 187 (for every 1% of MCA tax) thus suggests that if the MCA had been zero, about 23,562 ($= 187 \times 10.5 \times 12$) extra cattle would have appeared in the recorded export figures. On the very plausible inference that those cattle were smuggled into NI to avail of the higher prices prevailing there (which the MCA taxes sought to nullify) we conclude that the green currency system was responsible for estimated smuggling of at least 20,000 cattle ex RI into NI in 1981.

(ii) Every 1% of net MCA tax on RI imports from NI over the period January 1974 to December 1982 induced reduction of 247 in recorded imports of NI cattle into RI per month; likewise, every 1% of net MCA subsidy on RI imports from NI over the same period induced an increase of 247 in monthly cattle imports from NI into RI.

The relative significance of the estimate of 247 per month (for every 1% of subsidy) can be seen as follows: As before, taking 1981 as an example, recorded RI imports from NI came to 108,078 head. The estimate of 247 suggests that if the MCA had been zero, about 31,122 ($= 247 \times 10.5 \times 12$) fewer cattle would have been recorded as being imported into RI.

As already indicated, if all movement of cattle were through legal channels, the green currency system would not be able to

explain much of recorded trade in cattle between NI and RI. The reasons why it does so are straightforward. Thus consider a month when there was, say, a 10% MCA tax on RI exports to NI; there would then be a 10% subsidy on movements in the reverse direction. Under those circumstances and using national currencies and market exchange rates, the official CAP price level would be 10% higher in NI than in RI. The incentive would then be to smuggle into NI, thereby evading the 10% MCA tax. Thus RI exports to NI would be underrecorded. In reality, of course, RI exports to NI would have increased, due to deflection of cattle away from non-RI markets in favour of NI, where smuggling would maximize the return across markets. But under the same circumstances cattle moving ex NI into RI would go through legal channels, thereby collecting the MCA subsidy. The reverse scenario would apply at times when there was a 10% subsidy on RI exports to NI and a symmetric tax on NI exports to RI, reflecting higher official CAP prices in RI than in NI.

4. TRADE IN LIVE PIGS AND UNMILLED BARLEY

Analysis of RI/NI trade in other CAP products was by no means as thorough as that for trade in live cattle.

(4. i). Live Pigs

Market organization in the pigmeat sector is similar to that in beef and veal. A Basic Price (analogous to the Guide Price in the case of cattle) is set annually. When reference prices are low relative to the Basic Price measures may be taken to support prices and when reference prices are significantly higher than the Basic Price measures may be taken to encourage downward



movement of prices. Aids for private storage and the system of refunds on exports to non-EEC countries have been the principal media through which prices have been supported. There is also a system of sluicgate prices (minimum import prices) and levies on imports from outside the Community.

The 1977 PAMC report, discussed in Section 3. ii, noted that "recent experience has shown that at times during 1975 - 76 some 5,000 pigs per week were moving illegally into the Republic. An increase to 20,000 pigs per week is not considered an impossible target if the service is demanded." (p. 40). Subsidies at point of pig slaughter under the MIES were accordingly maintained in NI until early in 1980. These were designed to prevent once-only smuggling southwards. Note that, unlike the case of live cattle, MCA's on the live pig cross-border trade were not suspended when those MIES subsidies were available.

The regressions¹⁶ for recorded RI/NI trade in live pigs, estimated using data for the 108 months between January 1974 to December 1982, were as follows:

$$X = \text{constant} + 308S - 6PS - 4PN - 16,026Z, \quad R^2 = .07$$

(1.2) (-0.2) (-0.2) (-2.7)*

$$M = \text{constant} - 636S + 47PS - 50PN + 7,771W - 1,909Z \quad R^2 = .31$$

(-3.2)* (2.4)* (-2.8)* (1.5) (-0.4)

The variables are defined as follows:

X, M, S, PS and PN are defined in a manner analogous to the case of cattle.

Z: Dummy variable representing MIES subsidies and the simultaneous application of slap-markings designed to prevent carouselling ex RI into NI. Equals 1 for October 1976 to January 1980; otherwise equals 0.

W: Dummy variable representing application of slap-markings to prevent carouselling of pigs ex NI into RI. Equals 1 for May 1981 to December 1982; otherwise equals zero.

We note that only one variable -- S, the percentage rate of subsidy on live pigs entering NI from RI -- has its theoretically expected sign in both equations. However it is statistically significant in the import equation only. To the extent that we can rely on them, these results suggest the following:

(i) Every 1% of net MCA subsidy on RI exports to NI induced increased recorded exports of about 308 RI pigs per month into NI, whilst, symmetrically, every 1% of net MCA tax on RI live pig exports to NI induced reduction in recorded exports of about 308 pigs per month. The reason for this is simple: A subsidy on exports would mean that all real (as distinct from carousel) export trade would go through legal channels. It would also mean that artificial exports would go through customs into NI thereby availing of the subsidy, would be smuggled back into RI thereby evading the MCA tax, would be re-exported to NI through customs, once again collecting an MCA export subsidy, etc. -- and so the carousel would continue revolving. The reason why an MCA tax on RI exports to NI would be associated with a fall in recorded pig exports to NI is found in the fact that if a tax were applicable, RI pigs would enter NI through the smuggling route.

(ii) Every 1% of MCA tax on RI imports from NI induced reduction of about 636 in recorded imports of NI pigs into RI per month; likewise, every 1% of MCA subsidy on RI imports from NI induced an increase of about 636 pig imports per month from NI into RI. Since (for herds of given sizes) an MCA should not, if all trade

were through legal routes, affect recorded trade, this again reflects illegal movement of live pigs.

The carousel seems to have been operated on an extraordinary scale in some months, even at low rates of MCA. Thus consider the four month period April to July of 1976, when the MCA rate was about 4% (operating as a subsidy on RI exports to NI and as a tax on movements in the reverse direction). The official RI trade statistics record that RI live pig exports to NI came to 220,249 head in those four months -- 101,619 of them in July alone -- while movements southwards are recorded at a mere 3,169 head. At the same time the officially recorded pig herd in RI increased from 915,500 on 1st April to 984,000 on 1st August. It is difficult indeed to avoid the conclusion that most of the pigs which went north came back to the south, illegally.

A study by Herlihy and Cowan estimates that the carousel "trade" in live pigs was 210,000 in the third quarter of 1976¹⁷. On the basis of disposals analyses for RI and NI (1976, 3rd quarter, to 1982, 1st quarter) the same study highlights the meaninglessness of recorded trade data for pigs as a reflection of reality. Consider first the 14 quarters (1976, 3, to 1979, 4) when MCA subsidies on RI exports to NI, and taxes on movements southwards, applied. According to the official RI trade statistics, RI was a net exporter of some 379,000 live pigs to NI over the period; Herlihy and Cowan estimate that in fact, RI was then a net importer of 852,000 live pigs from NI. They estimate that over the period, true (ie., non-carousel) imports of pigs into RI from NI came to 942,000 head; their

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estimate for once-only smuggling of live pigs into RI was 918,000 head. Thus almost all imports of pigs into RI (1976, 3, to 1979, 4) came via the smuggling route. For the same period they estimate that the carousel ex RI into NI came to 317,000 head. During the 9 quarters (1980, 1, to 1982, 1) MCA taxes applied on legal movements ex RI into NI and subsidies applied on movements in the reverse direction. According to the official RI trade statistics RI was a net importer of 907,000 live pigs from NI over the period. Herlihy and Cowan estimate that in fact RI was a net importer of only 643,000 pigs from NI over the period. The difference of 264,000 between these two estimates reflects once-only smuggling of pigs ex RI and carouselling of pigs ex NI into RI. (Herlihy and Cowan estimate the latter at 305,000 head).

(4. ii). Unmilled Barley

For cereals the CAP support system is generally similar to those in the pigmeat and in the beef and veal sectors.

Unmilled barley has been the principal cereal product traded between RI and NI. The regressions¹⁸ (estimated from monthly data for the 60-month period January 1978 to December 1982, since the published statistics do not enable us to go back further) are:

$$X = \text{constant} + 527S + 68BS - 340BN$$

$$(5.8)^* \quad (2.4)^* \quad (-1.8)^*$$

$$R^2 = .52$$

$$M = \text{constant} - 17S - 0.5BS - 43BN$$

$$(-0.8) \quad (0.1) \quad (-1.1)$$

$$R^2 = .25$$

The variables are defined as follows:

X : Recorded monthly exports of unmilled barley, RI to NI, in 100 kgs.

M : Recorded monthly imports of unmilled barley, NI to RI, in 100 kgs.

S : MCA percentage subsidy on unmilled barley, RI to NI, and the symmetric tax on movements in the reverse direction. As was the case with cattle and pigs, this variable had a negative value at times when RI exports were taxed.

BS, BN: Barley output in tonnes (000) in RI and NI, respectively. Grain production peaks in July/August. Output starts to affect trade in August: contracts for the next 12 months are also made around then. Thus the barley output figures used for a given month, for months prior to August, were the annual output figures for the preceding calendar year; for August and subsequent months, current year output data were used.

The MCA variable S again has its expected sign in both equations, and is highly significant in that for exports. According to these estimates:

(i) Every 1% of net MCA subsidy on RI exports to NI induced increased recorded exports of about 52,700 kgs. per month of barley from RI into NI, whilst, symmetrically, every 1% of MCA tax on RI exports to NI induced reduction in recorded RI exports to NI of about 52,700 kgs. per month. These estimates reflect the volume of illegal trade on the RI export front.

(ii) Every 1% of MCA tax on RI imports from NI induced reduction of about 1,700 kgs. in recorded monthly imports of barley from NI to RI. Likewise, every 1% of net MCA subsidy on RI imports from NI induced an increase of about 1,700 in recorded monthly imports of barley from NI into RI. This reflects the magnitude of illegal activity on the RI import front.

5. ILLEGAL TRADE IN OTHER CAP PRODUCTS

No further regressions were estimated. However there appears to have been considerable smuggling of all CAP products between RI and NI. Illegal trade in dairy produce has probably been relatively small. That is partly because the bulk of RI's trade in such produce has been through An Bord Baine (RI's Milk Marketing Board) which, it is believed, has not been engaged in illegal activities. Nevertheless, butter smuggling is known to have existed. In the 1970's this was from NI into RI¹⁹. Following the reversal of the MCA position in 1980 and 1981 (when sterling switched from being a negative to a positive MCA currency) the smuggling was from RI into NI. In fact, in May 1980 it was estimated that about one third of all the butter sold in NI in the preceding few months had been smuggled from RI²⁰. In July 1981 it was estimated that about 25% of all the butter sold in NI in the preceding 12 months had been brought over the border illegally²¹.

Smuggling of live pigs was curtailed considerably during the period in which the MIES subsidy scheme, combined with the simultaneous application of slap-markings to live pigs, was in force. However the illegal trade in the pigmeat sector then switched to bacon sides: in November 1976 it was estimated that almost 6,000 sides, or the equivalent of 3,000 pigs, were being smuggled southwards each week²². The situation was complicated by the fact that there were then also small-scale legal imports of bacon from NI. In consequence, wholesalers were able to produce documentation to show that quantities of NI bacon were in fact legally imported, but these, it was

claimed, were supplemented by the illegally imported bacon²³.

In June 1979 it was estimated that eggs smuggled from NI accounted for almost 20% of the total RI egg market²⁴. And in 1981, when sterling had become a positive MCA currency, there were complaints of large-scale smuggling of bread from RI into NI²⁵.

6. CONCLUSION

A common market in agricultural produce does not exist in the EEC. In reflection of that fact, a high percentage of RI/NI trade in CAP produce is of an illegal nature. MCA subsidies are claimed when they are due and granted when they are not legally due. MCA taxes are evaded on a large scale. Illegal operators are the gainers. EEC taxpayers (including those in Ireland) are the losers. Resolution of the present situation involves abolition of the green monetary system and its associated network of MCA's which involve differential pricing within the Community. However, the political will among EEC countries for such reform does not really seem to exist. Hence, it would appear, a true European Common Market in agricultural produce will continue to be non-existent.

NOTES FOLLOW

NOTES

1. Commission of the European Communities, Economic Effects of the Agri-Monetary System, Com (78), Brussels, February 1978, and A History of the Monetary Compensatory Amounts, Information, P - 44, Brussels, July 1982. Similar reasoning has recently been applied to explain overproduction of dairy produce in positive MCA countries. See M. Keane and D. Lucey, "The Effects of Positive MCA's on the EEC Dairy Budget", Department of Dairy and Food Economics, University College, Cork, October 1983.
2. M. Loseby and L. Venzi, "The Effects of MCA's on EC Trade in Agricultural Commodities", European Review of Agricultural Economics, Vol. 5, No. 4, 1978, p. 24.
3. R. Strauss, "Economic Effects of Monetary Compensatory Amounts", Journal of Common Market Studies, Vol. XXI, No. 3, March 1983, p. 272.
4. C. Ritson and S. Tangerman, "The Economics and Politics of Monetary Compensatory Amounts", European Review of Agricultural Economics, 1969, Vol. 6 - 2, pp. 119 - 164.
5. These, and a large number of other MCA anomalies in the beef and veal sector, are discussed at length in D. Norton, Ireland, The CAP, Trade Distortion and Induced Smuggling Activity, 1974 - 1981, European League for Economic Co-Operation, Irish Section, Dublin, January 1983, Chap. V.
6. R. Strauss, op. cit., p. 272.
7. For the case of RI and NI, the following studies do recognise the existence of smuggling induced by the agri-monetary system: Commission of the European Communities, op. cit., 1978; B. Revell and D. MacLaren, "The Impact of Agri-Monetary Policy on UK Trade in Beef and Veal", paper delivered to Symposium on Price and Market Policies in European Agriculture, Newcastle, England, September 1983.
8. This subsection draws directly on D. Norton, "The Common Agricultural Policy, Smuggling, and the Two Percent Levy of 1979", Policy Paper No. 6, Centre for Economic Research, Department of Economics, University College, Dublin, November 1983, forthcoming in Journal of the Irish Society for European Law.
9. See D. Norton, op. cit., January 1983, pp. 91 - 93.
10. The MIES had been in operation on a temporary basis, and at relatively low rates of payment, from 28 April 1975 to 12 July 1975 and throughout the first half of 1976. It was a nationally financed scheme introduced in an emergency situation.
11. P. A. Management Consultants, Green Pound Differential and the Northern Ireland Meat Industry, Department of Agriculture for Northern Ireland, February 1977. I am grateful to the Department of Agriculture for Northern Ireland for making a copy of this unpublished report available to me.
12. D. Norton, op. cit., January 1983.

13. Commission of the European Communities, op. cit., 1978, Annex C, p. 7.
14. The raw data showed strong evidence of seasonality; therefore monthly dummy variables were used. Maximum likelihood estimation by the Cochrane-Orcutt procedure was employed in these and in the subsequent regressions.
15. The RM variable has the "wrong" sign in both equations. Nevertheless -- although we cannot see why -- it is of high statistical significance in the RI import equation.
16. There was no evidence of seasonality; therefore no seasonal dummies were used.
17. P. Herlihy and C. Cowan, "Trade in Live Pigs between Northern Ireland and the Republic of Ireland", Irish Journal of Agricultural Economics and Rural Sociology, 1983, pp. 179 - 192.
18. There was some slight evidence of seasonality. Therefore monthly dummy variables were used.
19. Irish Farmers' Journal, 29 March 1975.
20. Ibid., 10 May 1980.
21. The Irish Times, 23 July 1981.
22. Irish Farmers' Journal, 6 November 1976.
23. The co-existence of legal and illegal trade, in order to minimize risk of detection, has been noted elsewhere. See M. Pitt, "Smuggling and Price Disparity", Journal of International Economics, 11 (1981), pp. 447 - 458.
24. Irish Farmers' Journal, 16 June 1979.
25. The Irish Times, 23 July 1981.

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