

## **ORGANISED CRIME IN THE USA DURING PROHIBITION: AN ECONOMIC ANALYSIS OF THE RISE OF AN ILLEGAL INDUSTRY**

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*This study examines the alcohol industry during the Prohibition era in the United States. Conor Doyle explains continued production in spite of prohibition by examining the supply and demand for illegal labour and the novel organisational incentive structures used to operate in this environment.*

### **Introduction**

The historian and economist William Chambliss once argued that:

“As long as providing things that are heavily in demand is illegal, crime networks of one sort or another are inevitable” (1988: 9).

From the standpoint of the economist, this statement is highly questionable. If there is an economic activity which we would expect *a priori* to be disorganised, it is crime. We would expect it to be difficult to attract the necessary factors of production (entrepreneurs and workers) to the sector, given the high risks involved. Furthermore, those who engage in crime work outside the institutional boundaries of traditional economic activity. There are not only high incentives to break agreements (high returns to cutting proceeds for oneself, robbery, etc.), but few of the traditional economic sanctions apply when doing so (legally enforceable contracts with suppliers, purchasers, or employees).

However, from the standpoint of the historian, the truth of the above statement is beyond doubt. Crime is an activity which has always had organised elements, and continues to do so today. This paper examines one particularly notorious example of organised illegal economic activity: the illegal liquor trade in the United States during the period 1920-1933, with particular focus on the Chicago area. The purpose of the paper is to explain how the economic context at the time led to such a boom in illegal activity. Section two will explain how

demand for labour in illegal industries was generated by conditions in the U.S. national economy and its linkages to the labour markets of other nations. Section three will explain how the supply of labour to illegal crime was generated. The section demonstrates the rationality of the average unskilled worker in joining organised crime by constructing a utility function for an unskilled worker across his wages in two legal sectors of the economy. Finally, section four ties the supply and demand for labour together by examining the internal incentive structures which co-ordinated organised crime ventures. The section will further demonstrate how they are similar to the incentive structures which have held together other organisations faced with similar problems.

The reader should note that due to the nature of the topic, the quality of data used within the paper varies. I have compared activity in illegal sectors of the economy with better documented sectors as often as possible, in order to draw reasonable conclusions. Nonetheless, I claim only to sketch the subject, and offer broad conclusions.

## **The Demand for Labour in Organised Crime**

To return to the opening quote, the fact that a good comes to be demanded illegally does not necessarily guarantee its availability on the market. Theoretically, if an illegal industry is to grow, one of two things must happen: either demand for the final product must rise, or supply must increase. Either effect will lead to an increase in output. To generate this increase in production, there must be an increase in employment. However, before this can happen, there must be an entrepreneur to organise production and demand this labour. The purpose of this section is to explain why entrepreneurs were attracted to the sector, and consequently how the demand for labour in the supply of illegal alcohol was derived.

First, let us examine the market for illegal alcohol. On the demand side, while alcohol consumption declined to 20% of its pre-prohibition levels in the years immediately following 1920, it had recovered to 65-70% of its former size by 1927, and stayed at roughly this level through to repeal in 1933 (Miron and Zwiebel 1995: 244-5). The demand for alcohol did not rise significantly following the end of prohibition, despite falls in price of at least 50%,<sup>1</sup> suggesting that demand was almost entirely inelastic with regard to price (Chicago Tribune 5 December 1933, cited in Allsop 1961: 68). This further suggests that the

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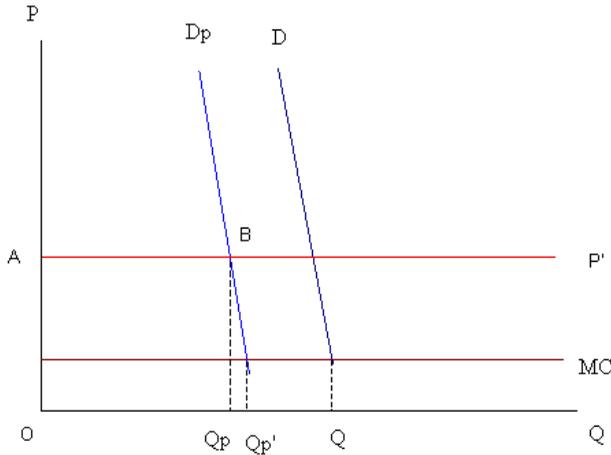
<sup>1</sup> Interestingly, the 50% rise in consumption (compared to pre-1920 figures) which was attained by 1927 is mirrored by a 50% drop in price on the day prohibition was repealed, suggesting that little of this extra cost was due to production costs.

difference between pre-1920 and post-1933 consumption levels represents a change in tastes. On the supply side, there is evidence of significant monopoly control in the Chicago area. First, the structure of the mafia within the area is described as monopolistic in its operation, with individual gangs selling to defined territories, and each gang either producing their own alcohol, or buying solely from a central figure (Tyler 1962: 168-9; Kobler 1974: 315-19). Secondly, price increases suggest monopoly control by suppliers. Local newspaper quotations estimate that the price of alcohol had roughly tripled during this period, with revenue in Chicago alone at an estimated \$5.3mn per week (Allsop 1961: 63).<sup>2</sup> Thus market revenues ( $REV = P \times Q$ ), had increased over those available in the previous legal alcohol market by a factor of roughly  $3 \times 0.675 = 2.01$  by 1927. A rough graphical representation of the market is presented in figure 1, which models a monopoly market with highly inelastic demand. Consumption is at  $Q$  prior to 1920, and following a shift in tastes when prohibition is established, rises to  $Q_p$  in 1927. Price rises from  $MC$  to  $P$  during prohibition, and suppliers earn a supernormal profit of the area  $ABQ_pO$ . When price falls again in 1933, however, there is no change in tastes, and  $Q_p$  moves only to  $Q_p'$ . Thus, the available evidence on the operation of the market for illegal alcohol does suggest that revenue levels gave a more than plausible incentive for entrepreneurs to go into the business.

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<sup>2</sup> Tyler repeats the same prices in a more anecdotal fashion: "Capone booze – and for years it had been good booze – was delivered on time, ninety dollars the case. Capone beer... rolled into the speakeasies on time invariably, fifty-five the barrel" (1962: 169).

**Figure 1: The Market for Alcohol**



The demand for labour is derived from the willingness of entrepreneurs to organise the use of labour for production. Demand for labour will rise in response to an increase in the marginal productivity of labour (MPL) =  $d \text{ Profits} / d \text{ Output}$ . Given that alcohol was supplied legally prior to 1920, the base employment in the sector was zero, and thus the marginal product of labour was zero. As revenues in the market for alcohol increased under prohibition, so MPL rose and demand for labour in illegal industries was stimulated. Simply to replace the workers who had legally supplied alcohol required a large increase in personnel. Furthermore, there is anecdotal evidence that production technology became more labour intensive during the period, suggesting that the expansion in labour demand by organised crime entrepreneurs was greater than that needed to replace the workers which had previously produced for 70% of the legal market (Mahan & O’Neil 1998: 33)<sup>3</sup>. However, supernormal profits encouraged the expansion of employment. Total revenue from alcohol sales to Chicago speakeasies alone were around \$13.78bn per year. The minimum reduction which was seen on any alcoholic drink following the end of prohibition was 50% (Allsop 1961: 68).<sup>4</sup> Even if production required more labour (at pre-prohibition wages), supernormal profits represented at least 50% of alcohol income, or \$6.89bn per annum.

<sup>3</sup>“During the prohibition era of the 1920’s in Chicago... Gangsters shipped over Sicilian families and set them up with a cooker each. The raw alcohol was collected each week”. This seems likely to be more labour intensive than factory production.

<sup>4</sup> Quoting prices from The Chicago Tribune on the day prohibition ended.

Most of the labour which was directly demanded for organised crime was unskilled (Cressey 1972: 34).<sup>5</sup> Furthermore, much of the basic production of alcohol was relatively unskilled, taking place as it did at a household level. Conditions in the unskilled labour market were particularly favourable for the criminal entrepreneur. There is good reason to believe that unskilled labour constituted a higher percentage of the population than in previous decades. Domestic natural increase in labour had increased supply, but education had not increased greatly. In the period 1870-1920, the US had seen an increase in labour supply of 166%, while median years of schooling had increased by only 1.5 years in the 45 years prior to prohibition (Maddison 1991: 231 and Census Bureau 1961: 214).<sup>6</sup> Immigration had increased supply. 17.5% of labour supply increase came from immigrant labour from 1870-1920 (Maddison 1991: 235, 241). In the period 1900-1920, that is the period which would have supplied the bulk of active immigrant labour during prohibition, just over 78% of immigrant labour was unskilled<sup>7</sup> (Census Bureau 1961:60). The labour market in the United States during the first half of the twentieth century was thus characterised by an increase in the supply of organised crimes' main labour categories. Thus, during prohibition the demand for labour in illegal alcohol production rose, as market incentives encouraged the growth of employment.

## The Supply of Labour to Organised Crime

However, This is only to say that the conditions existed in which organised crime *could* expand during prohibition. Given the nature of the industries we are examining, this is not enough to conclude that the activities *would* expand. Employment in organised crime generated higher risks for the employee than other sorts of employment. He could be jailed or killed for his troubles. In choosing whether to accept any job, the worker faces a gamble: that

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<sup>5</sup> Compiling the accounts of various organised crime figures argues "Most of the persons occupying the lower status positions in the divisions of labour constituting the enterprises are not members of Cosa Nostra (The Mafia)... They (also) fill the organizations needs for... low level services such as driving trucks and cars, delivering messages, running errands, picking up illegal betting slips, and answering telephones used in bookmaking operations. Positions requiring personnel with such skills far outnumber membership positions."

<sup>6</sup> Calculated as the difference in median years of schooling between those in the 30-34 and 70-74 years age groups in 1940.

<sup>7</sup> I take unskilled immigration to be the total of those listing occupation as labourer, farm labourer, private household worker, or no occupation. The figure is biased upward somewhat by the inclusion of farm foremen in the farm labourers category. Note that immigration barriers had been imposed in 1921, so immigration following this date may not be purely responsive to market incentives. I thus ignore this period in my calculations.

the payoffs to taking this work will be higher than those which could be gained in alternative employment. This section demonstrates that the average worker was willing to accept the gamble of joining organised crime.

Theoretically, criminals must have earned a higher expected wage to make up for the utility effects of higher wage variance inherent in their rewards structure. Values of wages for criminals are, of course, not systematically recorded. We thus estimate values of wages which are consistent with the average unskilled workers utility function, and show that these values are consistent with wages which the revenues estimated above would have allowed entrepreneurs to pay. To determine whether the wage offered by organised crime sufficiently compensated the criminal to induce the average worker to join, we need to quantify the relationship between wages and risk for the average worker by generating a utility function for unskilled workers during prohibition. I make two assumptions to do this. First, I assume that workers maximise expected utility, in the manner described by Von Neumann & Morgenstern (Gravelle and Rees 2004: 369-375). Second, for ease of computation I assume non-pecuniary benefits are nil, and subsequently that utility is a function solely of wages.

The first step is to generate a basic utility function for unskilled male labourers in legal industries of differing risk levels<sup>8</sup>. Consider a worker who has just left school, and is deciding which industry to enter. He can either become an unskilled labourer in coal-mining, manufacturing, or organised crime. Whichever profession he chooses, he faces a risk of unemployment, say for a period of one year, after which he finds a job. The worker faces two possible outcomes on entering this sector. The expected utility of a worker undertaking standard manual labour over a lifetime of work is therefore the average of the present value of the two income streams which he may earn, weighted by the probability of earning each stream:

$$E(U) = \{ \int (W1 \cdot e^{-R \cdot t1/100}) \times P(E) \} + \{ \int (W1 \cdot e^{-R \cdot t2/100}) \times (1-P(E)) \}, \quad (1)^9$$

where  $E(U)$  is the workers utility from the offered wage,  $W1$  is his annual wage,  $R$  is the discount factor for future earnings,  $t_1$  is the years to be worked if immediately employed,  $t_2$  the years to be worked if unemployed for a year,  $P(E)$  is the probability of employment (i.e.  $1 -$  the national unemployment rate), and  $1 -$

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<sup>8</sup> I take specifically male wages due to the structure of organised crime employment – “The Mafia is the surest stronghold of male chauvinism in America... a woman is considered a piece of property” (Gage 1973: 95).

<sup>9</sup> Note that there is no divisor in the term. As we weight the different wage streams by probability, we are implicitly dealing with only one case, and thus the divisor is one.

$P(E)$  is the national unemployment rate. The symbol  $e$  denotes the exponential, and the area to be integrated over is determined by the value of  $t$ .

Now, imagine his utility if he chooses to be a miner. Miners faced a chance of death 14 times higher than the average for industrial workers during the 1920's<sup>10</sup>. Therefore, the utility effects of this event are explicitly included in the miner's utility function. The worker now faces 4 possible states of the world, as the probability of death and unemployment are unrelated. The expected utility is thus the weighted average of these four income streams:

$$E(U) = \{ \int (W2.e^{-R.t1/100}) \times P(E).(1-P(D)) \} + \{ \int (W2.e^{-R.t2/100}) \times P(E).P(D) \} \\ + \{ \int (W2.e^{-R.t3/100}) \times (1-P(E)).(1-P(D)) \} + \{ \int (W2.e^{-R.t4/100}) \times (1-P(E)).P(D) \} \quad (2)$$

The term  $W2$ , the average earnings of a coalminer, replaces  $W1$ .  $P(D)$  is the probability of death, and  $t_1, t_2, t_3$ , and  $t_4$  denote the time periods to be worked in the different states of the world. Note that each of these income streams is weighted by the probability of their occurrence.

The employer will wish to offer the minimum wage necessary to induce the worker to accept employment with him, and thus offers a wage which gives the worker the same utility as (or negligibly greater utility than) that which the worker expects if he chooses not to accept the job. More importantly, there is good reason to believe that  $E(U)$  equalised across sectors during this period. Illinois coalminers were unionized, and earned higher wages than contemporaries in other areas. There was no incentive to pay unskilled manufacturing workers a wage which would give them a utility greater than that which could be earned in coal mining. Furthermore, research has shown that labour was internally mobile and fully responsive to wage rates within the U.S.<sup>11</sup>. Thus the employer could not offer a wage with less expected utility than that in mining. The conclusion that demand for alcohol was highly inelastic would suggest a highly inelastic labour demand curve, thus giving workers bargaining power. However, as Arlacchi points out, it is a feature of labour in the black market that wages can be kept as low as possible through intimidation (1988). Thus, we would still expect wages for unskilled crime operatives to be low. More formally, the expected wage in organised crime could be kept low enough so that the expected utility over the different unskilled sectors would be equivalent. The situation is therefore as described in diagram 2 below, which graphs the average workers utility against wage level. His utility

<sup>10</sup> Calculated from Fishback, (1992: 87). This is calculated by the ratio of deaths in coal mining per million hours worked to the average number of deaths per million hours worked in the fourteen other industries quoted. This gives a ratio of 2: 0.1395, or roughly 14: 1.

<sup>11</sup> "Domestic internal migration fully substituted for the population – and undoubtedly the labour – withdrawn from the urban sector by falling international migration" during the 1920s and 30s (Fishback 1992: 192).

## ORGANISED CRIME IN THE USA DURING PROHIBITION

function,  $U(W)$ , describes the trade off between wage and utility. The average worker can gain expected wage  $W_1$  if working in manufacturing or expected wage  $W_2$  in mining. The expected utility of these wages is equal, as the variance of wages is higher (different wage prospects are joined by the straight lines under the utility function). The minimum wage which the worker is willing to join organised crime at is  $W_3$ , which gives the same  $E(U)$  as the expected wages in the other sectors. The calculation of the numerical values of the terms in these functions is undertaken as follows:

### Function 1

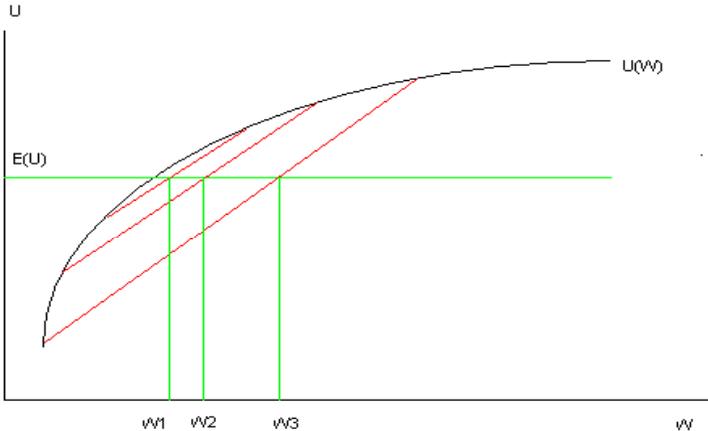
- $W_1$  = The average real wage of a male unskilled worker during the prohibition is calculated in tables 1 and 2 = \$26.87 per week = \$1402.96 in constant 1920 dollars;
- $P(E)$  = The average percentage of the workforce employed during the period under study = 0.9343;
- $(1-P(E)) = 1 - 0.9343 = 0.0657$ ;
- $R$  = The discount factor is taken to be the long term interest rate on government bonds. This is perhaps a low figure, but is chosen to represent the minimum possible yield a gangster could guarantee on his earnings = 4.449 (Macauley 1999: 101-104);
- $N = 47.3$  is the average life expectancy for the period in years<sup>12</sup>, while the median age of school leaving during the period was 14.2 years, giving wages for 30.75 years (Maddison 1991: 241 and Census Bureau 1961<sup>13</sup>).

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<sup>12</sup> An improvement here would be to employ life expectancy for those who survive the first 4-5 years of life. None are given.

<sup>13</sup> Calculated as the average of the median number of years spent in school by those who were aged 35-39 and 40-44 in 1940, i.e. those who were at least 15 years of age at the start of prohibition.

**Figure 2: Utility Function in the Unskilled Labour Market**



Function 2

- $W_2$  = the average wages of a coalminer. These were \$1500 p.a. in Illinois in 1926, or \$1485 in 1920 dollars (Fishback 1992: 93);
- $P(d)$  = Fishback quotes the number of hours worked by an unskilled coalminer in 1926 as 36.2, with an average of 2 deaths per million hours worked. The worker can expect to work  $(36.2 \times 52 \times 30.75) = 57,883.8$  hours. This gives a probability of death of  $= 0.058$ ;
- $t_1$  = average number of years to be worked = 30.75. Thus we integrate this term over 0 and 30.75;
- $t_2$  = average number of years to be worked if Assuming the miner enters the work straight from school, the best estimate we of the age of the coalminer at time of death is the age of the average coalminer. This is calculated as  $\text{Years of Schooling} + (\text{Average age of Retirement} - \text{Average Years of Schooling} / 2) = 30.75$ . Average wages foregone are thus = 16.55 years. Thus we integrate over 0 and 16.55;
- $t_3$  = time to be worked if unemployed. As this takes the form of losing the first years earnings, we integrate over 1 and 30.75
- $t_4$  = time to be worked if unemployed and killed. We integrate over 1 and 16.55

ORGANISED CRIME IN THE USA DURING PROHIBITION

**Table 1: Employment and Wage Data**

Year	Unemployment %	C.P.I.	Unskilled Index Wage	Unskilled Wage Index (1920=0)
1920	3.9	194	469	100
1921	11.4	169	388	82.72921109
1922	7.2	165	357	76.11940299
1923	3	168	393	83.79530917
1924	5.3	168	406	86.56716418
1925	3.8	173	404	86.14072495
1926	1.9	171	409	87.20682303
1927	3.9	167	418	89.12579957
1928	4.3	165	420	89.55223881
1929	3.1	165	431	91.89765458
1930	8.7	161	424	90.40511727
1931	15.8	147	407	86.7803838
1932	23.5	131	355	75.69296375
1933	24.7	124	356	75.90618337
Totals	120.5			
Averages	8.607142857			

Sources: Unemployment from Maddison, 1991: 261

Consumer Price Index from Maddison 1991

Unskilled Wage Index from Williamson, 2004

**Table 2: Employment and Wage Data Continued**

Year	CPI (1920=0)	Real Wage Index	Real Wage (constant 1920 \$'s)	Interest Rates
1920	100	1	25.98	4.453
1921	87.11340206	0.949672601	24.67249416	4.473
1922	85.05154639	0.894979647	23.25157123	4.487
1923	86.59793814	0.967636308	25.13919129	4.516
1924	86.59793814	0.999644634	25.97076759	4.503
1925	89.17525773	0.965971135	25.09593009	4.533
1926	88.1443299	0.989363957	25.70367561	4.517
1927	86.08247423	1.0353536	26.89848652	4.16
1928	85.05154639	1.052917232	27.35478969	4.425
1929	85.05154639	1.080493636	28.07122466	4.432
1930	82.98969072	1.089353587	28.30140619	4.517
1931	75.77319588	1.145264929	29.75398286	4.432
1932	67.5257732	1.120949234	29.1222611	4.43

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1933	63.91752577	1.187564482	30.85292524	4.453
Totals			376.1687062	53.388
Averages			26.8691933	4.449

Sources: Real Wage for Unskilled Workers from the Census Bureau, (1961), series D602 Interest rates from Macauley, (1999, p A101-104). Calculated as the average return on U.S. government railroad bond, adjusted for variable non-stationarity, quoted in column 5 of these charts. These bonds are chosen as their issue is unrelated to currency issue.

By filling in these values to the utility functions above we find that the worker earns an expected lifetime wage with present value of roughly \$23,035 in manufacturing, with standard deviation of roughly \$310.67. In coalmining he earns an expected lifetime wage with present value of roughly \$23,969 with standard deviation of roughly \$1,867. This renders the unsurprising conclusion that workers are risk averse, as in figure 2 above. However, the degree of aversion is extremely slight, mapping an almost linear utility function. As wage variance increases by 502%, wages increase by a factor of only 4%. That is, for every increase in variance of 125%, a 1% pay rise will be demanded.

The next step is to compare this utility function to the expected utility of a Mafia member. Only anecdotal evidence is available on criminal's wages, but the size of the income variance necessary to dissuade them from joining organised crime is so large as to make it exceptionally implausible that the members of one New York gang reported themselves as earning a basic wage of \$200 per week (Sifakis 1987: 266). This represented an increase of roughly 700% over the standard manufacturing wage. Assuming, as above, that for a 1% pay increase will be demanded for every 125% increase in standard deviation, the standard deviation of income would have had to increase by around 87,500% before the worker decided to enter legal labour market.

From the historical records we have, it seems impossible that the risks facing criminals could generate this level of variability in earnings. There was also a higher probability of death while working for organised crime. An average Italian gang, at its basic operating level, held 100 members, and there were 14 major gangs in New York in 1929 (Sifakis 1987: 44-45). This gives roughly 1400 gangsters in the city, without including the many non-gang members involved in gang activities. Let us assume that Chicago, a city of roughly 2/3 the population of New York, had 1000 gangsters, and a much larger population of workers who were not formal gang members, but worked for organised crime. There were 703 gang deaths in Chicago due to alcohol trading during prohibition (Allsop 1961: 40). Each gangster was directly responsible for around 10-15 non-gang members (Cressey 1972: 25-30). If all workers are replaced, this yields a minimum total criminal population of roughly 11,700, and a probability of death of 6% - almost

the same as that in coal mining. Accordingly, it seems to have been a perfectly rational choice for workers to wish to join organised crime. Similarly, the fine for a conviction for production or supply of illegal alcohol was \$1000, or five weeks pay. Even major criminals with repeat convictions faced only 9 month jail sentences<sup>14</sup>. This accounts for a cumulative loss of earnings of only 10 months for two convictions, or less (in a ratio sense) than the 12 month loss considered above for the worker who found himself unemployed for a year.

There are of course problems with the main estimation undertaken in this section. I expect that the implied levels of risk aversion are biased downwards by the fact that I have assumed all labourers work the same number of hours. Coalminers actually worked less hours than manufacturing workers, and thus earned higher hourly wages (Fishback 1992). Given that there is no data on hours in organised crime, I have had to assume hours worked to be equivalent. The wage figures are also biased upwards by the fact that I have ignored the non-pecuniary side effects of risk (stress). Furthermore, the figures presented for organised crime activities do not come close to meeting standards of academic research applied to better quantified fields. However, I believe the case for the rationality of labourers in these industries is proved by the sheer size of the numbers involved in the utility function. Even large quantitative changes would make no qualitative difference to the conclusion of the section – the miniscule levels of risk aversion implied in the labour supply of unskilled labour in legal industries are more than low enough to account for the supply of labour to organised crime.

### **The Co-ordination of the Activities of Organised Crime: Incentive Structures**

The preceding section has analysed the returns to the factors involved in the production of illegal alcohol. It was a rational economic act for entrepreneurs to organise and workers to join the organizations in question, despite the risks involved. However, this does not explain the existence of the organization to begin with, or why it persisted. Organised crime, when thought of at the level of the firm as a whole, faces a number of organizational problems which are not faced in a legally organised firm. Internally, the lack of legally enforceable contracts between workers and management gives workers an incentive to shirk, or

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<sup>14</sup> Two owners of a large illegal brewery caught in the same raid. “(O’Banion) received the maximum penalty for a first offence, a \$1,000 fine”. The second offender, Torrio, “pleaded guilty to violating Volstead Act at the Sieben Brewery (which he had bought from O’Banion) and received a 9-month prison sentence” (Purcell 2000).

trade on their own behalf. Externally, the lack of legally enforceable contracts with external entities makes it hard to buy any intermediary services and raises the information costs involved in dealing with outside entities. Furthermore, solutions to these problems must be found using non-monetary means where possible, in order to ensure the secrecy of the activity.

The lack of contracts between workers and management was overcome in two major ways. The first and most important element in holding together crime syndicates, as emphasized above, is the fact that the returns were so high. It would seem from the section above that the workers in organised crime were paid considerably more than a wage which rendered the same expected utility as legal employment. The expected utility from working in organised crime was considerably higher than that in any other sector. Only an exceptionally lucrative opportunity, or exceptionally high value for leisure time, could entice an individual to risk his high Mafia earnings. Thus, supernormal profits were not only a promoting factor in the development of crime but an enabling factor. Secondly, organised crime groups were not run as large businesses, but as conglomerates of small businesses. As noted above, each boss was directly responsible for the actions of only 10-15 people, and often ran his own business (his distillery, distribution ring, etc.) independent of that of other members of the same gang. This reduced costs in two ways. First, it reduced the information costs of the individuals involved, by reducing the number of people on which any one manager had to oversee and trust (though it did increase the costs of production by increasing the number of intermediaries). Secondly, it encouraged workers to hire those who they already knew, in the form of friends or family. This implies that the losses from cheating a partner were multiplied greatly over those which would pertain from cheating a regular business partner. All non-pecuniary benefits of family and friendship were denied to those who cheated. The ability of workers to act in their own interests was not overcome as such, but was annulled by allowing these activities as long as they paid a certain amount of profit to their managers, essentially franchising the gang's protection for a certain amount of profits (Albini 1979: 288). Again, these activities do not create much excess transaction costs, or secrecy costs. Neither use of friendship nor higher wages entail more transactions.

The problems and solutions found in these operations are not unique in economic history. Almost exactly the same incentive structure was seen in the Hudson's Bay Company. The main managerial problem of the Hudson's Bay Company was similar to that of organised crime – though contracts were legally enforceable, behaviour of workers in Canada could not be observed by managers in London to see if contractual obligations were being fulfilled. The incentive given to employees to work on behalf of the company were very similar to those seen in organised crime. First, pay was exceptionally high. Secondly, kinship among workers was encouraged by employing labourers solely from the Orkney

Islands, thus ensuring that any indiscretions recorded during service with the company would be well known on return home. Thirdly, limited outside trading was allowed (Carlos & Nicholas 1990).

The external problems of organised crime were easier to ameliorate. The problem of dealing with outside suppliers was reduced through vertical integration of functions. Some gangsters would organise the production of alcohol, others the cutting, and others the transportation<sup>15</sup> (Sifakis 1987: 266). This structure of production reduced the number of outside groups which had to be contacted in order to organise the business, thus further reducing information costs. It also maintained secrecy, and reduced the need for financial transactions. The lack of legally enforceable contracts with purchasers was overcome by the willingness to employ violence (Albini 1979: 269-273). Without legally enforceable contracts, the contracting partners would find it difficult to offer believable promises to honour contracts. By essentially offering their bodies as collateral, this problem was overcome at low financial cost to the respective parties, and without involving any monetary transactions.

## Conclusions

This paper posed the question of why organised crime rose during the prohibition era in the United States. It is less than obvious that making an economic activity illegal will lead to an increase in people engaging in it. In order to demonstrate the reasons for the explosion of organised crime, I have examined three areas. First, I have shown that market incentives were such that they enabled firm-like relations to develop. Supernormal profits made it rational for entrepreneurs to attempt to organise illegal economic activity. Secondly, I have demonstrated that it was rational for labourers to supply labour to these organizations. The high wages available more than compensated for higher wage variability. Finally, I discussed the incentive structures and business methods which were developed for co-ordination of the activities within the organization, and with other organisations. These followed a strict economic rationale without compromising the organisation. In conclusion, it seems that the market incentives created by prohibition did indeed make the growth of organised crime “inevitable.”

Several areas of further study present themselves. First, it would be useful for further understanding of organised crime to examine the effects of the simultaneous repeal of prohibition and the Great Depression in the period after

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<sup>15</sup> Gangs included an array of unskilled workers (guards, messengers, enforcers), all responsible as a group to a certain boss.

1933. Similar data are available for the period, but lack of space limits a discussion of the change in organizational forms and activities undertaken by organised crime during this period. Second, the role played by corruption has also been largely omitted here, again due to lack of space. A better examination of the extent of corruption, its organisation, and the ways in which it was overcome, would appear to have useful applications in developing economics.

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