

The Financial Flows of Transnational Crime:

A Preliminary Survey

by

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Summary:

This paper tries to meet two objectives: A literature review of the size and development of the proceeds of transnational crime organizations (TOC) and a breakdown of the different types of crime proceeds, like the ones from drug-, human-, and arms trafficking. Moreover, some remarks are made about the infiltration of the TOC into the “official” economic system and the functioning of the Hawala banking is explained. One conclusion is that a detailed analysis of the financial proceeds and their sources is crucial in order to reduce the basis of operations of the TOC.

Keywords: Transnational organized crime (TOC), financial flows of transnational crime, money laundering, Hawala banking, infiltration of transnational crime, financial proceeds of TOC.

JEL-Codes: C80, C82, H56, K42, O17, Y1

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1. Introduction

Until 2008, the growth of the world economy was quite high and improved the economic well-being all over the globe, but this development was accompanied by some risks, too. One of them is transnational organized crime (TOC), which rose remarkably in the last 20 years¹. This raises the following two questions:

- (1) From where does transnational crime get its proceeds, and what do we know about their size and development?
- (2) What economic implications does transnational crime have?

In this contribution question (2) will be very briefly answered, in my paper the main focus lies on providing a more detailed answer on the size and development of the finances of transnational crime and their origin (question 1). A detailed analysis of the financial proceeds and their sources is crucial in order to reduce their possibilities, so that the basis of their operations is at least limited. Such an analysis is another goal of this paper. Hence, my literature review will meet two objectives: to widen the knowledge of this subject and the understanding of the main issues under debate and to focus on the literature closely related to the research topic. The body of literature on transnational crime financing is diverse and quite often merely descriptive; hence in my paper only some important contributions are summarized. This literature review can not be separated from the analysis of the finances of terrorist organizations, because transnational crime organizations and terrorist groups often work closely together².

My paper is structured as follows: section 2 provides a literature review on the kinds of transnational crime proceeds. Section 3 shows the infiltration of transnational crime into the economic system and makes some remarks about the Hawala banking system. In section 4 some conclusions and policy recommendations are drawn.

¹ See for an example Walker and Unger (2009) and Masciandaro (2004).

² Compare Schneider and Caruso (2011), Schneider (2008a, 2008b, 2009), Makarenko (2002, 2003a, 2003b, 2003c), Koh (2006) and Masciandaro (2004).

2. Transnational Crime Proceeds and the Link to Terrorist Group Financing

The similarities between transnational crime and terrorist groups are fully described by Schneider (2008a, 2008b, 2009), Sanderson (2004); Gilmore (2004), Shelley (2005); Wilkinson (2005); Makarenko (2002, 2003a, 2003b, 2003c) and Koh (2006); these similarities are:

- (1) Both are rational actors, e.g. they know quite well what they are doing,
- (2) both use extreme violence and the threat of reprisals, in order to reach their goals;
- (3) both operate secretly, though at times publicly in friendly territory; and
- (4) both defy the state and the rule of law .

According to Masciandaro (2004, 2005, 2006), Picarelli (2006), Shelley (2005) and Yepes (2008) the issues of transnational crime, money laundering, and the financing of terrorism have the following common aspects:

- (1) Transnational crime and terror organizations use wire transfers or electronic payment systems to move money through multiple jurisdictions.
- (2) Both engage in a variety of criminal activities like traffickers and other criminal syndicates. However, the line is now becoming less defined, since terrorists often resort to crime and cooperate with criminals in generating money, obtaining arms and explosives. According to Makarenko (2003a, 2003b) criminals are likely to use terrorism tactics and violence in pursuit of revenues:
 - (i) Drug, arms and human trafficking³, trading in precious stones (diamonds) and other commodities,
 - (ii) smuggled cash, cigarettes, and other addicted goods, and
 - (iii) classical criminal activities, like kidnapping.

Both groups benefit from shell companies and offshore bank facilities. For instance, money laundering experts⁴, argue that both groups use a technique known as a “starburst”: A deposit

³ Makarenko (2003a), p. 66 writes: “The most common criminal activity terrorist groups have been involved in is the illicit drug trade. Since the 1970s groups such as FARC, Basque Fatherland and Liberty (Euzkadi Ta Askatasuna – ETA), the Kurdistan Workers Party (Partiya Karkaren Kurdistan – PKK) and Sendero Luminoso have all been linked to the drug trade by well-documented evidence. Since the early 1990s additional groups such as Hizbullah and the IMU have also realised the financial utility of participating in the illicit drugs trade. It is alleged that Hizbullah continues to protect heroin and cocaine laboratories in the Bekaa Valley; and evidence strongly indicated that the IMZ – prior to the Afghan campaign – controlled drug trafficking routes into Central Asia from northern Afghanistan”.

of dirty money is made in a bank with standing instructions to wire it in small, random fragments to hundreds of other bank accounts around the world, in all type of financial centers. Tracking down the money becomes very difficult, since getting legal permission to pursue bank accounts in multiple jurisdictions can take years. Napoleoni (2005, p.33) argues, *“You build a long chain of representative offices at the end of which there is a shell company registered offshore, and you are lucky, if you get to the end of the chain. Financial investigations often run into a blind alley always through, somewhere, in a tiny offshore office”*. From this Napoleoni (2005) concludes that it is extremely difficult to track down crime money.

A number of scholars (Napoleoni (2005), Yepes (2008)) argue that typical operational characteristics of the financing of terrorist groups are:

- (i) Low costs made possible some recent attacks with a great impact on human lives, on nations, and on economies (e.g. 9/11 New York, Madrid, London and Mumbai).
- (ii) Flexible and decentralized organizations with independent decisions and actions.
- (iii) Common ideology with indiscriminate targets (no purpose related to profit).
- (iv) Financial means are needed to plan and execute (future) terrorist attacks; there is only a limited need to hide assets.
- (v) Self-financing with possible criminal activities but also obtaining money from legal sources (e.g., donations and charity organizations). Terrorists use different sources of money, depending on their motivations, their mode of operations, and the resistance they face from law enforcement. Quite often the money starts off clean, and becomes “dirty” only when the terrorist crime is committed later on. Hence, terrorist “enterprises” use clean money to commit crimes. The money sometimes consists of legally obtained resources that are used for a limited period of time and of smaller amounts of money to prepare attacks.
- (vi) The accumulation of money or wealth is not a goal at all; it is “only” a mean / weapon for reaching the goal of destroying a state / government.

⁴ See: Koh (2006), Schneider (2004, 2008a, 2008b, 2009, and 2011) and Masciandaro (2004).

3. Transnational Crime Proceeds and Money Laundering⁵

3.1 Transnational Crime Proceeds

Dirty money from crime is earned through various underground activities, like drug, weapons and human trafficking. How much illicit crime money in all its forms can be observed?⁶ Baker (2005) estimates that this illicit money ranges between US\$ 1.0 and 1.6 trillion in 2000/2001. This estimate has been adopted by the World Bank. Moreover, Baker estimates that half – US\$ 500 to 800 billion a year – comes out of developing and transitional economies. These are countries that often have the weakest legal and administrative structures, the largest criminal gangs of drug dealers, and, far too often, economic and political elites who want to take their money out of the country by any means possible. In table 3.1, Baker's global flows from illicit activities are shown. According to Baker, the proceeds of bribery and theft are the smallest quantities, at only perhaps three percent of the global total. Generated funds from classical crime activities (No 1-7) account for some 30 to 35 percent of the global total crime activities. Commercial criminal activities, like tax evasion, in particular driven by abusive transfer pricing and faked transactions, as well as mispricing, are by far the largest components, accounting for 60 to 65 percent of the global total crime activities.

In table 3.2 the estimates of illicit flows out of developing countries and out of countries in transition over the period 2000 to 2006 are presented. As it is quite difficult to calculate exact figures, the table provides minimum and maximum values. Table 3.2 clearly shows that from the region "Asia and the Pacific" between 46.6 and 51.7 percent of all illicit financial outflows come from this region, followed by Europe, where the share is between 18.1 and 21.7. In the year 2006 between 858.6 and 1,056.2 billion US dollars left the developing countries. This is a range between 6 and 7 percent of the GDP of the developing countries, a quite a remarkable sum. It is also amazing that over time there is a strong increase in these illicit outflows. Whereas in the year 2002 the minimum value only amounted for 372.5 billion US dollars, it increased to 858.6 billion dollars in the year 2006, which means the value more than doubled.

⁵ For a detailed analysis see Schneider (2008a, 2008b, 2009, and 2011), Schneider and Windischbauer (2008), Schneider, Dreer and Riegler (2006), and Takats (2007).

⁶ Smith (2011) estimates that this amount is 1.5 trillion USD per year. However, these estimates are more guestimates, because no clear sources are given and even more important the procedure of calculation is not shown and critically discussed.

Table 3.1: Global Flows from Illicit Activities Worldwide, years 2000/2001

Number	Global Flows	Low (US\$ bn)	%	High (US\$ bn)	%
1.	Drugs	120	11%	200	12.5%
2.	Counterfeit goods	80	7.5%	120	7.5%
3.	Counterfeit currency	3	0.2%	3	0.2%
4.	Human trafficking	12	1.1%	15	0.9%
5.	Illegal arms trade	6	2.0%	10	0.6%
6.	Smuggling	60	5.6%	100	6.3%
7.	Racketeering	50	4.7%	100	6.3%
	Crime subtotal	331	31.2%	549	34.3%
8.	Mispricing	200	18.9%	250	15.6%
9.	Abusive transfer pricing	300	28.3%	500	31.2%
10.	Fake transactions	200	18.9%	250	15.6%
	Commercial subtotal	700	66.0%	1,000	62.5%
11.	Corruption	30	2.8%	50	5.1%
	Grand Total	1,061	100.0%	1,599	100.0%

Source: Baker (2005).

Table 3.2: Estimates of Illicit Financial Flows out of Developing Countries and Countries in Transition, 2002-2006, in billion US \$

		2002	2005	2006	2006 in % of total illicit outflows	2006 in % of GDP
Developing countries of which	Min	372.5	674.9	858.6	100%	6%
	Max	435.4	805.8	1,056.2	100%	7%
Sub-Saharan Africa	Min	12.7	10.2	11.0	1.3%	1%
	Max	21.9	19.0	22.7	2.1%	3%
Asia and the Pacific	Min	192.9	364.0	400.0	46.6%	7%
	Max	219.1	448.9	546.3	51.7%	9%
Europe	Min	60.0	78.2	186.2	21.7%	7%
	Max	67.6	87.5	190.9	18.1%	7%
Middle East and North Africa	Min	22.1	125.3	164.8	19.2%	10%
	Max	25.1	143.1	187.4	17.7%	12%
Americas ('Western Hemisphere')	Min	84.8	97.2	97.3	11.3%	3%
	Max	101.7	107.2	108.9	10.3%	3%

Sources: Global Financial Integrity (Authors: Kar, D. and D. Cartwright-Smith), Illicit Financial Flows from Developing Countries, 2002-2006, Washington 2009 and World Bank Indicators (GDP current US dollars).

In Table 3.3 an overview of the most important import crime types and their proceeds on a worldwide basis for the year 2008 is given. Table 3.3 clearly shows that drug trafficking to North America, to Europe and to Russia is the most profitable business. Cocaine to America has an estimated proceeds of 38 billion US dollars, cocaine to Europe of 34 billion dollars, heroine to Europe 20 billion and heroine to Russia 13 billion, followed by counterfeit goods to Europe with 8.2 billion and then migrant smuggling from Latin America with 6.6 billion and illicitly traded South Asian timber has a value of 3.5 billion US dollars (compare also Figure 3.1). Table 3.3 and Figure 3.1 clearly demonstrate that the worldwide crime scene is a lively one, but also that drug trafficking is the most profitable business.

In Tables 3.4 and 3.5 some crime activities for the United States are reported. Table 3.4 shows the estimated earnings for criminal activity in the United States over the period 1965 to 2000, with and without tax evasion. If we first consider the criminal income it was rather modest in the year 1965 with 18 billion US dollars; however it increased to 224 billion dollars in the year 2000. However, in percent of GDP, the highest value was reached with 4 percent (or 166 billion US dollars) in 1985, then it declined again to 2.3 percent of GDP in the year 2000. If we consider the figure of tax evasion it is much bigger in size. The estimated value for the year 1965 was 49 billion US dollars or 6.8 percent of GDP and this increased to 779 billion US dollars or 8.0 percent of GDP. If one calculates the ratio of criminal income to total illicit income, the value was 37 percent in 1965, increased to 49 percent in 1985 and decreased then to 29 percent in the year 2000. Table 3.4 clearly shows that the tax evasion figures are by far the largest, in absolute values as well as in percent of GDP.

In Table 3.5 the estimated criminal proceeds in the United States for the year 1990, according to the various crime types, are presented. Again, tax evasion has with 262.2 billion US \$ or 57 percent of all crime proceeds (of 471.1 billion US dollars) the highest share, followed by the sum of all kinds of drug trafficking with 20.6 percent, then followed by fraud with 12.6 percent or 59.3 billion US dollars. Also prostitution and loan sharking are with 14.7 and 14.0 billion US dollars or 3.1 and 3.0 percent quite sizeable. Again, Table 3.5 confirms that drug trafficking is also for the U.S. the most profitable business, as it is worldwide.

Table 3.3: Overview of the Most Important Crime Types and their Proceeds, 2008

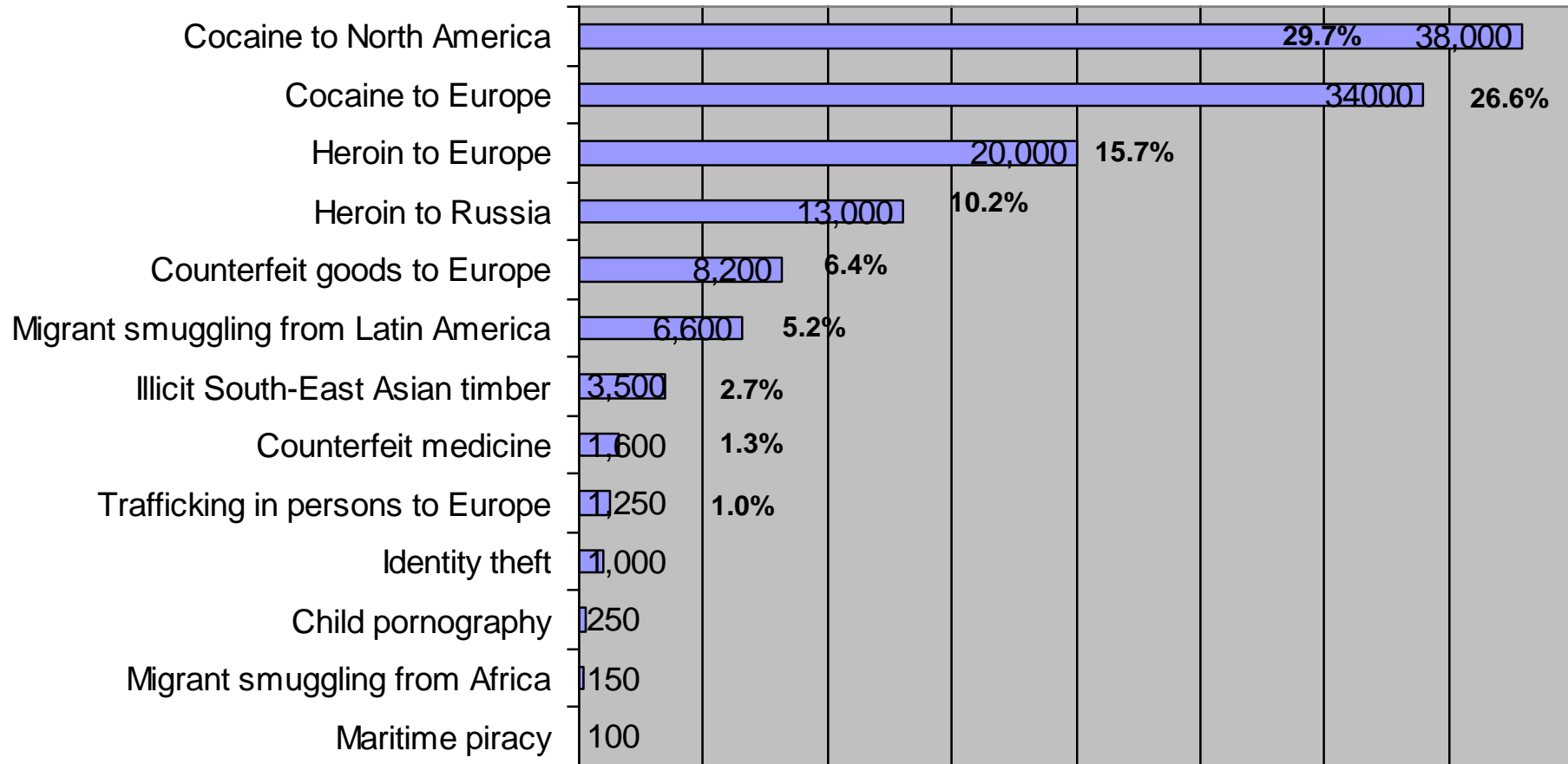
TOC problem		Estimated extent	Estimated annual value (US \$)	Estimated trend	Potential effects
Trafficking in persons	to Europe for sexual exploitation	70,000 victims (annual) 140,000 victims (stock)	3 billion (stock)	Stable	Human rights violations
Smuggling of migrants	from Latin America to North America	3 million entries (annual)	6.6 billion (income for smugglers)	Declining	Irregular migration, vulnerability of migrants
	from Africa to Europe	55,000 migrants (annual)	150 million (income for smugglers)	Declining	Irregular migration, death of migrants
Cocaine	from the Andean region to North America	309 tons (depart) 196 tons (at destination)	38 billion (at destination)	Declining	Addiction; drug related crime, corruption and violence in the Andean region; links with illegal and armed groups in the Andean region; destabilization and corruption in neighbouring states, Central America and Mexico
	from the Andean region to Europe	212 tons (depart) 124 tons (at destination)	34 billion (at destination)	Stable	Addiction, drug related crime and violence, destabilization and corruption in Andean countries, the Caribbean and West Africa
Heroin	from Afghanistan to the Russian Federation	95 tons (depart) 70 tons (at destination)	13 billion (at destination)	Increasing	Addiction, spread of HIV/AIDS; increase in organized crime, funding for criminals and insurgents, corruption
	from Afghanistan to Europe (excl. Russia)	140 tons (depart) 87 tons (at destination)	20 billion (at destination)	Stable	Addiction, increase in organized crime; funding for criminals and insurgents, corruption
Trafficking of firearms	from the United States to Mexico	20,000 weapons, mostly handguns	20 million	Stable	Rising deaths in Mexico's drug cartel wars
	from Eastern Europe to the world	at least 40,000 Kalashnikovs in 2007/08	at least 33 million (in 2007/08 at destination)	Declining	Death and instability

Table 3.3: Overview of the Most Important Crime Types and their Proceeds, 2008 (cont.)

Trafficking of natural resources	Wildlife from Africa and South-East Asia to Asia	Elephant ivory: 75 tons Rhino horn: 800 kg Tiger parts: Perhaps about 150 tiger skins and about 1,500 kg of tiger bones	Elephant ivory: 62 million Rhino horn: 8 million Tiger parts: 5 million	Increasing	Tigers and black rhinos may become extinct in the wild; impact on South-East Asia wildlife unclear; promotion of corruption and organized crime
	Timber from South-East Asia to the European Union and Asia	Perhaps 10 million cubic meters	3.5 billion (at destination)	Declining: Indonesia, Myanmar; possibly increasing in Lao PDR, Papua New Guinea	Deforestation, loss of habitat, loss of species, climate change, increased rural poverty especially amongst indigenous people, irregular migration, flooding, soil erosion
Product Counterfeiting	Consumer goods from Asia to Europe	Some two billion articles per year	8.2 billion (at destination)	Increasing	Loss of product safety and accountability, loss of revenue
Maritime Piracy	Medicine from Asia to South-East Asia and Africa	Billions of dose units	1.6 billion (at destination)	Unclear	Death, drug-resistant pathogens
	Off the coast of Somalia	217 attacks in 2009	100 million	Increasing	Difficulties in establishing Government authority, negative impact on local and international commerce
Cybercrime	Identity theft	Around 1.5 million victims	1 billion	Unclear	Increase in the costs of credit, depressive effects on the economy, loss of trust in e-commerce
	Child pornography	Perhaps 50,000 new images generated annually	250 million	Unclear	Child victimization

Source: UNODC, 2010, *The Globalization of Crime: A Transnational Organized Crime Threat Assessment*, New York, p. 16-17.

Figure 3.1: TOC Value Estimates in US\$ millions



Total sum 127,773 million US \$

Other crime types: Ivory to Asia 62 million (0.05%), Firearms from Eastern Europe 33 million (0.03%), Firearms to Mexico 20 million (0.02%), Rhino horn to Asia 8 million (0.01%).

Source: UNODC, 2010, The Globalization of Crime, New York, p. 200.

Table 3.4: Estimated Earnings from Criminal Activity* in the United States, 1965-2000 (in Billion of Current Dollars)

Year	Tax evasion included		Criminal income (tax evasion excluded)		Ratio of criminal income in total illicit income
	Estimated criminal income	in % of GDP	Estimated criminal income	in % of GDP	
1965	49	6.8%	18	2.5%	37%
1970	74	7.1%	26	2.5%	35%
1975	118	7.2%	45	2.7%	38%
1980	196	7.0%	78	2.8%	40%
1985	342	8.1%	166	4.0%	49%
1990	471	8.1%	209	3.6%	44%
1995	595	8.0%	206	2.8%	35%
2000	779	8.0%	224	2.3%	29%

* Criminal activities included are: trafficking in illicit drugs, human trafficking, burglary, larceny-theft, motor vehicle theft, robbery, fraud, arson, non-arson fraud, counterfeiting, illegal gambling, loan sharking and prostitution. Tax evasion crimes included federal income, federal profits, and excise tax evasion

Source: Peter Reuter, "Chasing Dirty Money – the Fight against Money Laundering", Washington 2004.

Table 3.5: Estimated Criminal Proceeds in the United States, 1990

Crime Types	Proceeds in billion of current US dollars	in % of total	in % of total
Tax evasion	262.2		55.7%
Drug trafficking			
Cocaine trafficking	61.3	13.0%	
Heroin trafficking	17.6	3.7%	
Marijuana trafficking	13.5	2.9%	
Other drug trafficking	4.8	1.0%	
Subtotal			20.6%
Fraud	59.3		12.6%
Prostitution	14.7		3.1%
Loan sharking	14.0		3.0%
Motor vehicle theft	8.0		1.7%
Illegal gambling	7.6		1.6%
Larceny/theft	3.8		0.8%
Burglary	3.5		0.7%
Robbery	0.5		0.2%

Human trafficking	0.2		0.04%
Counterfeiting	0.1		0.02%
Fraud arson	0.04		0.008%
Total	471.1		100%

Source: Peter Reuter, “Chasing Dirty Money – the Fight against Money Laundering”, Washington 2004; based on Office of National Drug Policy (2000 and 2001).

3.2 Money Laundering

In the next step this “crime” money is laundered with the main goal to make dirty money appear legal (compare Walker (1999, 2000, 2004, 2007))⁷. There are many methods of money laundering; in table 3.6 according to Unger (2007) and Walker (2007) the 12 most common methods are shown. Which of these methods, which are mostly used, is chosen, depends on the type of crime activity and on the specific institutional arrangements in a country where the criminal money is “earned”? For example, in the drug business method 8, business ownership, is quite often used.⁸ In the drug business and in big cities smaller amounts of cash are earned by drug dealers in a lot of different places, which they infiltrate in to cash intensive operations such as restaurants which are especially well suited for money laundering purposes. But also cash deposits the so called smurfing method, or illegal gambling is quite often used.

Table 3.6: The Methods of Money Laundering¹⁾

1)	Wire transfers or electronic banking	The primary tool of money launderers to move funds around in the banking system. These moves can conceal the illicit origins of the funds or just place the money where the launderers need them. Often the funds go through several banks and even different jurisdictions.
2)	Cash deposits	Money launderers need to deposit cash advances to bank accounts prior to wire transfers. Due to anti-money-laundering regulations they often ‘structure’ the payments, i.e. break down large to smaller amounts. This is also called ‘smurfing’.
3)	Informal value transfer systems (IVTS)	Money launderers need not rely on the banking sector, other transfer providers, such as the Hawala or Hindi are readily available to undertake fund transfers. These systems consist of shops (mainly selling groceries, phone cards or other similar items), which are also involved in transfer services. IVTSs enable international fund transfers, as these shops are present in several jurisdictions.
4)	Cash smuggling	Money launderers might mail, Fedex or simply carry cash with them from one region to another, or even to different jurisdictions.
5)	Gambling	Casinos, horse-races and lotteries are ways of legalizing funds. The

⁷ Step one is the earning and collection of the crime money. Step three is to become as rich and influential as possible in the underground and legal world.

⁸ Compare Schneider (2004) and Masciandaro (2004).

		money launderer can buy (for 'dirty' cash) winning tickets – or in the case of casinos chips – and redeem the tickets or the chips in a 'clean' bank check. Afterwards, the check can be easily deposited in the banking sector.
6)	Insurance policies	Money launderers purchase single premium insurance (with dirty cash), redeem early (and pay some penalty) in order to receive clean checks to deposit. Longer term premium payments might make laundering even harder to detect.
7)	Securities	Usually used to facilitate fund transfers, where underlying security deals provide cover (and legitimate looking reason) for transfers.
8)	Business ownership	Money might be laundered through legitimate businesses, where laundering funds can be added to legitimate revenues. Cash-intensive operations, such as restaurants, are especially well suited for laundering.
9)	Shell corporations	Money launderers might create companies exclusively to provide cover for fund moves without legitimate business activities.
10)	Purchases	Real estate or any durable good purchases can be used to launder monies. Typically, the item is bought for cash and resold for clean monies, like bank checks.
11)	Credit card advance payment	Money launderers pay money in advance with dirty money, and receive clean checks on the balance from the bank
12)	ATM operations	Banks might allow other firms to operate their ATMs, i.e. to maintain and fill them with cash. Money launderers fill ATMs with dirty cash, and receive clean checks (for the cash withdrawn) from the bank.

¹⁾ Source: Unger (2007, pp.195-196).

With the help of the MIMIC estimation procedure⁹ Schneider (2008a, 2008b) estimates that money laundering and/or financial turnover from transnational crime has increased from 1995 USD 273 billion (1,33% of the total official GDP) to USD 603 billion (or 1,74% of the official GDP) in 2006 for 20 OECD countries (Australia, Austria, Belgium, Canada, Denmark, Germany, Finland, France, Greece, Great Britain, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Switzerland, Spain and the United States). These figures are presented in Table 3.7 which nicely shows the steady increase of the volume of laundered money over 1995 to 2006. On a world wide basis in 2006 the IMF estimates USD 600 billion to be laundered coming only from the drug (crime) business.

⁹ The MIMIC (Multiple Indicators Multiple Causes) procedure is a latent estimation method where the dependent variable is unknown. Hence an attempt is made to model the unknown variable (amount of money laundering) with the help of causes (various types of crime and their proceeds) and indicators like the development of cash). For further explanations see Schneider (2008a, 2008b) and the appendix where also the estimation results are presented.

Table 3.7: Calculations of the Turnover of Transnational Crime of 20 OECD countries using the MIMIC Estimation Procedure

Year	Volume of money laundering (billion USD for 20 OECD countries)	Volume of money laundering in % of GDP1)	20 OECD countries
1995	273	1.33%	Australia, Austria, Belgium, Canada, Denmark, Germany, Finland, France, Greece, Great Britain, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Switzerland, Spain and USA.
1996	294	1.37%	
1997	315	1.40%	
1998	332	1.42%	
1999	359	1.46%	
2000	384	1.47%	
2001	412	1.52%	
2002	436	1.56%	
2003	475	1.63%	
2004	512	1.66%	
2005	561	1.72%	
2006	603	1.74%	

Source: Own calculations, calibrated figures from the MIMIC estimations.

Unger (2007) estimates the amount of laundered money and its top 20 destination countries; these figures are shown in table 3.8 cover the time span 1997-2005. In this table two estimates are presented, one by Walker (1999, 2007) and one by the IMF. The Walker figure of 2.850 billion USD is much larger than the IMF figure with 1.500 billion USD (both figures are for the year 2005). Walker's figures have been criticized as much too high which was one reason why the IMF estimates are shown, too. Table 3.8 clearly demonstrates that two thirds of worldwide money laundering was sent to the top 20 countries listed. One should realize that most of these countries are highly developed and have quite sizeable legal/official economies. What is also amazing is, that there are only a few microstate offshore countries (OFCS) and tax heavens among them (Cayman Islands, Vatican City, Bermuda and Liechtenstein)¹⁰. The majority of countries that attract money laundering flows are economically big players and not some tiny unimportant countries. The United States has the largest worldwide share of money laundering of almost 19%, followed by the Cayman Islands (4,9%), Russia (4,2%), Italy (3,7%), but also smaller countries like Switzerland (2,1% of worldwide money laundering), Liechtenstein (1,7%) and Austria (1,7%) are quite attractive. If one takes the

¹⁰ Compare also Masciandaro (2005, 2006), Zdanowicz (2009), Truman and Reuter (2004), and Walker and Unger (2009):

lower IMF value for Austria, Switzerland and the United Kingdom, roughly 5.5 % of the total amount is laundered, which comes close to roughly 10% of official GDP of the three countries. However, it needs to be emphasized that it is not clear whether this money is “only” laundered in these countries or remains in these countries; it may well leave these countries after the laundering process. In general, table 3.8 demonstrates how substantial the amount of laundered money is and that two thirds of these funds are concentrated in only 20 countries.

Bagella, Busato and Argentiero (2009, pp.881) use a two-sector dynamic general equilibrium model to measure money laundering for the United States and the EU-15 macro areas over the sample 2000:01-2007:01 at a quarterly data basis. Their series are generated through a fully micro-founded dynamic model, which is appropriately calibrated to replicate selected stochastic properties of the two economies. Their model (and the analysis) has a short run perspective. Bagella et al. (2009, pp.881) got the following results: First the simulations show that money laundering accounts for approximately 19 percent of the GDP measured for the EU-15, while it accounts for 13 percent in the US economy, over the sample 2000:01-2007:04. Second, the simulated money laundering appears less volatile than the corresponding GDP. As regards the EU-15 macro area, the simulated statistics suggest that money laundering volatility is one-third of the GDP volatility; for the US economy, the same statistics produce a figure of two-fifths. Considering these estimates I admit that they are pretty high.

Table 3.8: The Amount of Laundered Money and Top 20 Destinations of Laundered Money, Year 2005¹⁾

Rank	Destination	% of worldwide money laundering	Walker estimate 2.85 trillion US\$ Amount in billion US\$	IMF estimate of 1.5 trillion worldwide Amount in billion US\$
1	United States	18.9%	538,145	283,500
2	Cayman Islands	4.9%	138,329	73,500
3	Russia	4.2%	120,493	63,000
4	Italy	3.7%	105,688	55,500
5	China	3.3%	94,726	49,500
6	Romania	3.1%	89,595	46,500
7	Canada	3.0%	85,444	45,000
8	Vatican City	2.8%	80,596	42,000
9	Luxembourg	2.8%	78,468	42,000

10	France	2.4%	68,471	36,000
11	Bahamas	2.3%	66,398	34,500
12	Germany	2.2%	61,315	33,000
13	Switzerland	2.1%	58,993	31,500
14	Bermuda	1.9%	52,887	28,500
15	Netherlands	1.7%	49,591	25,500
16	Liechtenstein	1.7%	48,949	25,500
17	Austria	1.7%	48,376	25,500
18	Hong Kong	1.6%	44,519	24,000
19	United Kingdom	1.6%	44,478	24,000
20	Spain	1.2%	35,461	18,000
	SUM	67.1%	1,910,922	1,006,500

1) Source Unger (2007: 80).

From a global perspective for 2000, the IMF (2003, 2001) as well as the World Bank estimate that 2-4% of the world gross domestic product (GDP) stem from illicit (criminal) sources. Agarwal and Agarwal (2006) estimate from economic intelligence units that global money laundering amounts to more than 2.0 to 2.5 trillion US\$ annually or about 5-6% of World GDP in 2006 (4,444 trillion US\$ in 2006) to be contrasted against an observed figure of US\$ 500 billion to one trillion in 2004 from the same authors (Agarwal and Agarwal (2004)). Recent IMF estimates on money laundering by drug traffickers who “introduce” the proceeds gained through the selling of drugs into the legitimate financial market, amount to 600 billion US\$ annually. The IDB (2004) reaches the conclusion that for Latin America a rough estimate of illicit flows appears to be somewhere between 2.5 and 6.3 % of annual GDP of Latin American countries. Besides the figures from Agarwal and Agarwal which are much higher, the others seem to be plausible considering their size.

In their latest study Walker and Unger (2009, page 821) again undertake an attempt to measure global money laundering and/or the proceeds from transnational crime that are pumped through the financial system worldwide. They criticize methods such as case studies, proxy variables, or models for measuring the crime economy, arguing that they all tend to under- or overestimate money laundering. They present a model, which is a gravity model and which makes it possible to estimate the flows of illicit funds from and to each jurisdiction in the world and worldwide. This “Walker Model” was first developed in 1994, and was recently updated. The authors show that it belongs to the group of gravity models which have recently become popular in international trade theory. The authors demonstrate that the original

Walker Model estimates are compatible with recent findings on money laundering. Once the scale of money laundering is known, its macroeconomic effects and the impact of crime prevention, regulation and law enforcement effects on money laundering and transnational crime can also be measured. Walker and Unger (2009, p. 849-850) conclude that their model still seems to be the most reliable and robust method to estimate global money laundering, and thereby the important effects of transnational crime on economic, social and political institutions. Rightly they argue that the attractiveness of the distance indicator in the Walker model is a first approximation, but is still quite ad hoc. A better micro-foundation for the Walker Model will be needed in the future. A micro foundation means that, the behavior of money launderers is analyzed, and in particular what makes them send their money to a specific country. Hence, Walker and Unger (2009, p. 850) argue that an economics of crime micro-foundation for the Walker Model would mean that, similarly to international trade theory, behavioral assumptions about money launderers have to be made. Their gravity model must be the (reduced form) outcome of their rational calculus of sending their money to a certain country and potentially making large profits.

Table 3.9: Annual Money Laundering by Region in Billion US\$

Region	Year		
	2000	2002	2005*
Americas	313	328	350
Asia-Pacific	246	254	292
Europe	230	234	241
Middle East/Africa	38	40	44
Total	827	856	927
in % of GDP	2.7%	2.6%	2.0%

* forecasts.

Source: Celent C., "Anti-Money Laundering: A Brave New World for Financial Institutions, September 2006.

Table 3.10: Volume of Crime Related Money Laundering, 2002 in Billion US\$

Crime Types	Volume (in billion US \$)
Drugs	66
Smuggling	37
Other crime	90
Terrorism	0.5
Total	193

Source: Celent C., "Anti-Money Laundering: A Brave New World for Financial Institutions, September 2006.

In Table 3.9, the worldwide amount of money laundering is split up in four regions, and the figures are shown from the year 2000 to 2005. The “Americas” region has the highest value with 313 billion US dollars in the year 2000, which increases to 350 billion dollars in 2005. The Americas are followed by the Asia-Pacific region with 246 billion US dollars in 2000 and then increased to 292 billion US dollars in the year 2005. According to these figures, the amount of worldwide money laundering in the year 2000 accounted for 2.7% of the worldwide GDP or 827 billion US dollars, which decreased to 2.0% of the worldwide GDP (927 billion US dollars). In Table 3.10, the volume of crime related money laundering in the year 2002 according to crime types is shown. Again, the single most important crime type is drug trafficking with 66 billion US dollars, followed by smuggling with 37, and all other crime types account for 90 billion US dollars. Here also terrorism is mentioned which has a minor value of half a billion US dollars.

4. Some Single Sources of Transnational Crime Proceeds

Obviously the financial sources of transnational crime come from a number of crime activities where the transnational crime organizations are engaged. Some important single items and important single countries will be analyzed.

4.1 Drug Trafficking

In Tables 4.1.1 and 4.1.2 some facts about the size of the global illicit drug market and the breakdown into regions and the level of selling are presented. Table 4.1.1 shows the value of drugs sold in the illicit drug market in 2003. The value of which bought from producers was 13 billion US dollars, and increased to 94 US dollars, of which bought at wholesale level, resulting in a ratio of 1:3.4. This value increased at the retail level to 322 billion US dollars, which is a ratio compared to the price bought from producers from 1:25, quite a remarkable increase. Table 4.1.2 shows the regional breakdown of the global illicit drug market in the year 2003. North America shows the highest value with 142 billion US dollars or 44% of the whole market, followed by Europe with 106 billion US dollars (33% of the world market), then followed by Asia with 35 billion US dollars (11% of the world market.). These tables clearly demonstrate the importance of the illicit drug market and show the size of the profits, if one makes a comparison of the prices and profits obtained by producers, compared to the retail level.

Table 4.1.1: Size of Global Illicit Drug Market in 2003 (in Billion US\$)

	Sold at retail level	of which sold at wholesale level	of which bought from producers
Value of drugs sold	US\$ 322 bn	US\$ 94 bn (1:3.4)*	US\$ 13 bn (1:25)**

* Wholesale level compared to retail level

** Producer level compared to retail level

Source: UNODC, 2005 World Drug Report, Volume 1, Analysis, Vienna 2005, p. 127.

Table 4.1.2: Regional Breakdown of Global Illicit Drug Market in 2003 (N=US\$ 322 billion)

	North America	South America	Europe	Asia	Africa	Oceania	World
Value in billion US\$	142	9	106	35	14	16	322
in %	44%	3%	33%	11%	4%	5%	100%

Source: UNODC, 2005 World Drug Report, Volume 1, Analysis, Vienna 2005, p. 127.

According to Yepes (2008) in May 2002 a report called “Global Overview of Narcotics-Funded Terrorist and Other extremist and transnational crime groups”¹¹ was launched, prepared by the Federal Research Division of the Library of Congress and the US Department of Defense. The report examined connections between terrorist groups and narcotics trafficking in the following regions of Latin America: Triborder Region (Argentina, Brazil, and Paraguay), Colombia, and Peru; in the Middle East: Lebanon, in Southern Europe (Albania and Macedonia); in Central Asia: Kyrgyzstan, Tajikistan, and Uzbekistan and in East Asia: The Philippines. In this respect clear evidence is shown in relation to drugs and financing and the connection to transnational crime organizations.

4.2 Oil Smuggling

According to Johnson (2001) and Napoleoni (2005) another crime business is oil smuggling, where terror, criminal, and legitimate economies interact. Countries, where oil smuggling is a significant problem are Thailand, China, Russia, Cambodia, Iran and Tanzania. In all these countries oil smuggling “creates” significant profits, a substantial portion of which enters the

¹¹ See http://www.loc.gov/rr/frd/pdf-files/NarcsFundedTerrs_Extrems.pdf

laundering cycle. Oil smuggling is also related to arms trade according to Johnson (2001) and Napoleoni(2005).

4.3 Arms and Diamonds Trafficking

According to Levi and Gilmore (2002), Schneider (2004, 2008a, 2008b, 2009) and Yepes (2008) besides drugs and arms trafficking, as well as illegal diamonds trade are some of the most important sources of funding of transnational crime groups. The illicit arms trade demonstrates how comparatively easy it is to obtain false documentation accompanying arms shipments, especially end-user certificates. Inconsistent documentation requirements between states, and inefficient control in customs and port authorities in many states, have created an environment in which the illicit arms trade does not need to rely entirely on criminal activities:

- (1) When a state is involved in supplying arms to an embargoed state, payments or even a barter exchange often come in the form of commercial payments, such as “oil for arms” deals to avoid bank involvement.
- (2) When an arms broker supplies weapons to an embargoed state, banks are often used because shipments are usually paid for in the form of letters of credit by the direct transfer of hard-currency funds. In this case, money laundering becomes an important factor to ensure that the final arms destination is disguised. It is at this point that offshore banks play an important role because their facilities can ensure that any deposit or transfer is routed via several intermediary institutions; and deposits or transfers can be conducted in the name of a series of shell companies. Both of these techniques are used to hide the financial trail behind multiple administrative layers.
- (3) In situations where access to normal banking channels is very difficult (for example, as with most non-state actors), the financing of arms deals often takes a different form, most often through commodity exchanges. According to Smillie et al. (2000), illicit arms transfers to Liberia and Sierra Leone were often financed with diamonds and timber concessions.

4.4 Crime Scene in one Country: The case of Germany

In Table 4.2 the estimates of potential proceeds of all types of crime in Germany are shown. If one looks at the different types of crimes, tax and excise evasion has by far the largest share with 43.8 percent of all potential crime proceeds in Germany. The second largest share falls upon drug offenses with 17.5 percent, followed by robberies and theft with 15.8 percent, and

human trafficking with 15.4 percent. All other types of crime are minor compared to these large shares. One should also mention offenses against commercial legislation, which amounts to 7 percent. The total estimate, including unreported crimes, adjusted with a factor of 2 to 3, the total value is 57.135 billion US dollars or 1.6 percent of the German GDP¹². Table 4.2 clearly demonstrates that also in Central European countries, crime is an essential element and has reached a sizeable figure.

¹² Whether an adjusted factor of unreported crime with values only varying between 2 and 3 is realistic, one could have severe doubts. Quite often much higher figures are reported.

Table 4.2: Estimates of Potential Proceeds of Crime in Germany (a)

	Recorded crimes	Estimated Loss or Profit(b) € billion	Other Proceeds or Profit Estimates(c) € billion	Baseline Estimate € billion	Unreported crime adjusted estimate(d) € billion	Baseline estimate \$ billion	Unreported Crime Adjusted Estimate	in % of total crime
Robberies and Thefts	2,614,640	3.601		3.601	9.003	5.012	12.529	15.8%
Fraud Offenses	912,899	2.372	4.00(e)	4.000	10.000	5.567	13.917	17.5%
Drug Offenses	248,355		8.794(f)	8.794	8.794	12.239	12.239	15.4%
Human Trafficking			0.037	0.037	0.093	0.052	0.1299	0.2%
Arms Trafficking			0.005	0.005	0.012	0.006	0.016	0.0%
Sexual Crimes			0.032	0.032	0.081	0.045	0.113	0.1%
Counterfeiting and piracy of products			0.029	0.029	0.071	0.040	0.099	0.1%
Environmental Crime	16,528		0.002	0.002	0.005	0.003	0.007	0.0%
Insolvency offenses	5,484							0.0%
Tax and Excise Evasion			25.00(g)	25.000	25.000	34.793	34.793	43.8%
Offenses against commercial legislation	7,802	1.609		1.609	4.023	2.239	5.598	7.0%
Other Crimes			0.021	0.021	0.053	0.030	0.074	0.1%
Total Crimes	6,284,661	7.583	37.920	43.130	57.135	60.025	79.514	100.0%

Table 4.2: Estimates of Potential Proceeds of Crime in Germany (a) (cont.)

	Recorded crimes	Estimated Loss or Profit(b) € billion	Other Proceeds or Profit Estimates(c) € billion	Baseline Estimate € billion	Unreported crime adjusted estimate(d) € billion	Baseline estimate \$ billion	Unreported Crime Adjusted Estimate	in % of total crime
Percentage of GDP		0.2%	1.0%	1.2%	1.6%			
Memorandum Items								
- Money Laundering Offenses	3,923							
- Economic Crimes	87,934		4.200	4.200	10.500			
-Organized Crime			0.663	0.663	1.658			

Notes:

(a) Sources: National crime statistics 2007, Situation Report on Economic Crime in the Federal Republic of Germany, 2007. Narcotic Drugs Annual Report 2007. Organized Crime Situation Report 2008. All published by the BKA.

(b) Takes estimate from BKA crime statistics and apportions it upwards for incomplete investigations.

(c) Unless otherwise noted, these figures are calculated by apportioning estimated profits from organized crime to the crime categories that organized crime was identified as being involved in.

(d) Assumes actual crime is at least 2-3 times reported crime. An analysis of Germany data contained in the UN's 2004-2005 International Crime Victim's Survey and the 2005 European Survey on Crime and Safety provides the following justification for this assumption. The number of victims of profit generating crimes with common titles in the Germany criminal statistics ranged from 2.6 times the recorded level of crime for theft of motor vehicles to 11 times the number of reported crimes for consumer fraud with an average of 7.7. While some of this discrepancy can be explained by some recorded crime having multiple victims, it lends weight to scaling up the amount of recorded crime by a factor of 2 or 3 to obtain a more realistic picture of actual crime.

(e) Industry estimate of insurance fraud only, conveyed to assessors during on-site mission.

(f) Derived from United Nations Office on Drugs and Crime, 2005 World Drug Report, estimates of the value of retail drug markets.

(g) Based on Finance Minister estimate Bach/Dwenger "Unternehmensbesteuerung: Trotz hoher Steuersätze nur mäßiges Aufkommen", DIW-Wochenbericht Nr. 5/2007, S. 63 ff., that total tax avoidance and evasion amounts to € 100 m per annum.

Table assumes 25 percent is illegal tax and excise evasion.

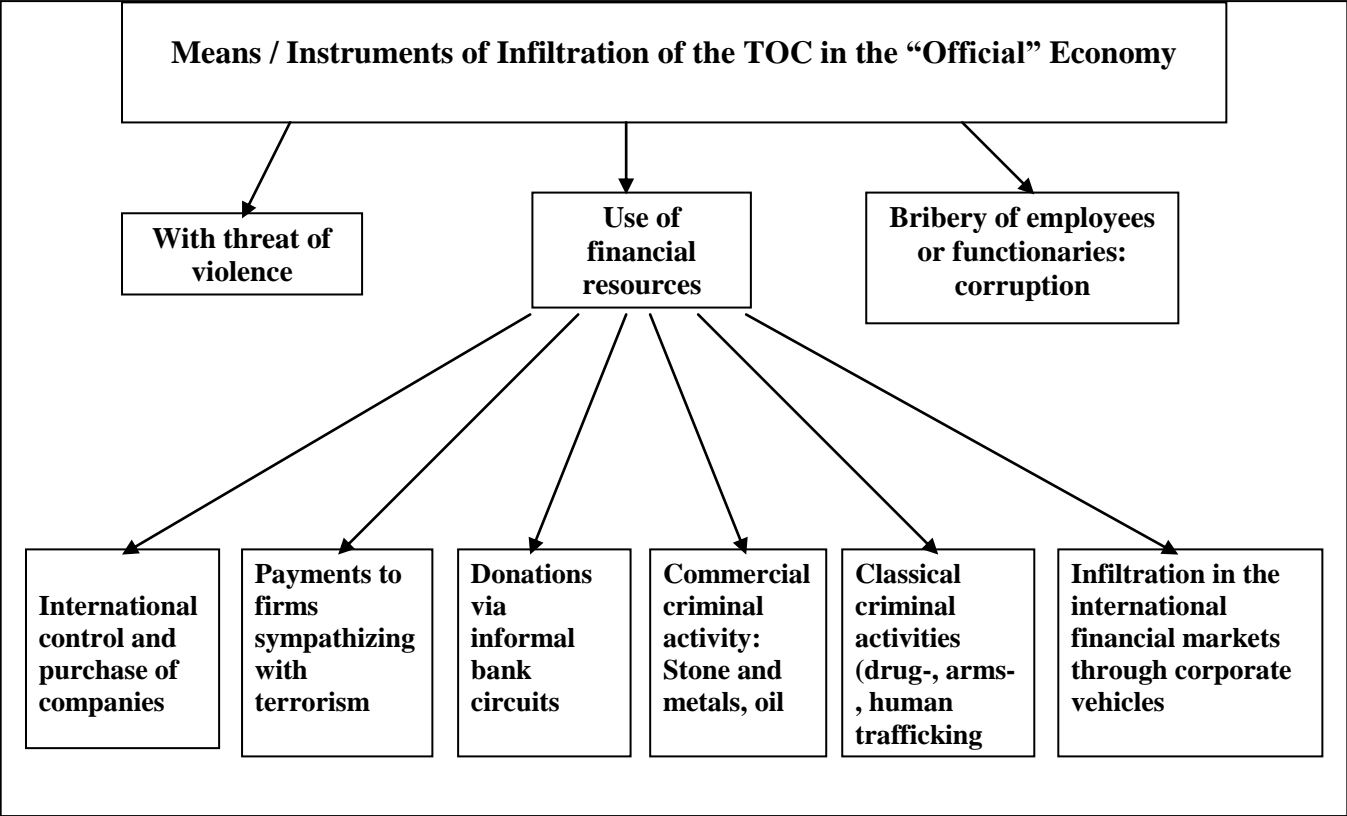
5. The Infiltration of Transnational Crime Organizations and the Informal Money Banking (Hawala) System

Obviously transnational crime organizations prefer to use an informal banking system, in order to make it more difficult for the state authorities to get detected. The most famous and oldest informal banking system is the Hawala banking system, which will be analyzed in part 5.2 after a short introduction of the kinds of infiltration organized crime organizations are involved.

5.1 The Infiltration of Transnational Crime

In figure 5.1 the various channels of the infiltration of the transnational crime groups are summarized. Figure 5.1 concentrates on the use of financial resources and clearly demonstrates that the financial means / flows stand on seven pillars ranking from legal investments to classical criminal activities.

Figure 5.1: Infiltration of the Legal Economy by Transnational Organized Crime (TOC)



Source: Own remarks.

5.2 The Informal Money Banking (Hawala) System

During the 1990s, international concern grew over the so-called “underground banking” and its abuse by serious offenders. Some academic works by Williams (2007), Savona (1997) and El-Quorchi (2003) have explained how informal systems operate, including their risks. The Informal Value Transfers Systems (IVTS) changes from region to region (Hawala or door-to-door). Some scholars (Williams, 2007; El-Quorchi, 2003) argue that Hawala is vulnerable to criminal abuse, and like the other financial institutions, there is evidence that money derived from drug trafficking, illegal arms sales, body part trade, corruption, tax evasion, and all kinds of fraud have indeed moved through Hawala networks.

Hawala banking still takes place and some authors analyze it like Perkel (2004) or Van de Bunt (2007). These authors point to the need for a regulation of the Hawala banking system. As argued, another way to transfer criminal financial flows is the Hawala banking. According to van de Bunt (2007), Hawala bankers¹³ are financial service providers who carry out financial transactions without a license and therefore without any government control¹⁴. They accept cash, cheques or other valuable goods (diamonds, gold) at one location and pay a corresponding sum in cash or other remuneration at another location. Unlike official banks, Hawala bankers disregard the legal obligations concerning the identification of clients, record keeping, and the disclosure of unusual transactions, to which these official financial institutions are subject.

To repeat it: Through this system that forms an integral part of the legal (formal) and informal market economy, Hawala bankers ensure the transfer of money without having to move it physically or electronically. When a payment needs to be made overseas, the underground banker will get in touch with a courier (or more recently using email, fax or phone) in that country informing him of the details of making the payment. If the recipient of the payment wishes to personally obtain the money, a code referring to the underground banker in the country of payment is given to the recipient. Such a system is almost untraceable since it leaves little if any paper trail. Transaction records are being kept only until the money is delivered, at which time they are destroyed. Even when there is a paper or electronic record of

¹³ Several traditional terms, like Hundi (India) and Fei-ch’ein (China) remind one of the fact that hawala banking came up independently in different parts of the world. At present, a range of other terms is used to refer to the same phenomenon, such as ‘informal banking’, ‘underground banking’, ‘ethnic banking’ or ‘informal value transfer system’.

¹⁴ This clearly means that Hawala banking system is a highly unregulated and informal system. Compare Schneider (2010) and Van de Bunt (2007).

the transaction it is often in dialects and languages that serve as a *de facto* encryption system¹⁵.

In Table 5.1 some guessestimates or estimates of Hawala banking turnover or proceeds are drawn. On a global scale, Page and Plaza (2006) estimate 57.53 billion US dollar as estimated amount of informal money flows used by Hawala banking for the year 2004, quite a large sum. The country sums are much smaller with the exception of the study by Fischer (2002), where he comes up with an estimated amount of informal money flows of Hawala banking for Saudi Arabia with 40 billion US dollars per year. Countries like Pakistan or Afghanistan range between 2.5 and 3.0 billion US dollar per year, a figure which is roughly attained by a lot of authors. Table 5.1 should be seen as a first attempt to come up with some ideas of the relative size of the estimated amount of informal money flows via Hawala banking.

Table 5.1: Hawala: Guessestimates or Estimates

Author/Source	country/area	year/period	estimated amount of informal money flows
Schneider and Caruso (2011)	India	2000-2005	5-10 billion USD per year
Fischer (2002)	Saudi Arabia	unknown	40 billion USD per year
Fletcher and Baldrin (2002)	Pakistan	2001	2.5 billion USD
Viles (2008),	Somalia		0.5-1 billion, USD
Page and Plaza (2006)	global	2004	57.53 billion USD
Omer (2004)	Somalia		
Omer and El Koury (2004)	Somalia	2004	0.7-1 billion USD per year
Zaidi (2010)	Pakistan	unknown	2.5-3 billion USD per year
IMF (2001)	Pakistan and Afghanistan	unknown	2-5 billion USD per year
Jessee (2006)	Pakistan	unknown	2-3 billions USD per year

According to van de Bunt (2007), there are at least two different perspectives on Hawala banking. From the first point of view, Hawala banking is regarded as a centuries-old institution, which has not yet outlived its usefulness. Low-income workers and migrant

¹⁵ Mostly these are legal payments and of course can include some illegal payments and it is unclear whether the Hawala banker knows this.

workers in particular supposedly put more trust in Hawala bankers than in formal banks. This viewpoint emphasizes the problem associated with subjecting Hawala banking to the same rules as formal banks. Regulation either through registration or licensing is seen as ineffective because it will simply push the system further into the underground, further complicating the already problematic task of controlling Hawala transactions (Razavy, 2005, p.292; Perkel,2004, p.210-211). Hence, Hawala banking might be the closest thing of a free market banking, without government regulation and it functioned well for centuries. One should clearly emphasize these advantages of Hawala banking when criticizing it. From the opposite point of view, van de Bunt (2007) argues that Hawala banking is described as ‘underground banking’, a system that flies under the radar of modern supervision of financial transactions. Underground banking can be considered a threat to the effectiveness of anti-money laundering measures and the fight against terrorist financing. To prevent underground bankers from becoming a safe haven for criminals and terrorists, they should be subject to the standard regulations regarding record keeping, disclosure of unusual transactions and identification of clients¹⁶.

6. Summary and Conclusions

In my paper an attempt is made to review the literature of the finances of transnational organized crime (TOC) with a focus on estimations of the volume of the finances of transnational crime. My paper reaches the following results:

First, the necessity of money laundering is obvious as a great number of illegal (criminal) transactions are done by cash. Hence, this amount of cash from criminal activities must be laundered in order to have some “legal” profit, to do some investment or consumption in the legal world.

Second, to get an estimate of the extent and development of the amount of the financial means of transnational crime over time is even more difficult¹⁷. This paper collects some findings and Schneider ((2008b) and (2010)) demonstrates that money laundering from transnational crime has increased from 273 billion USD (or 1,33% of official GDP) in 1995 to 603 billion USD (or 1,74% of official GDP) in 2006 for 20 OECD countries (Australia,

¹⁶ Compare also Richard (2005) and Rider (2004). This is a general claim in order to be on the safe side. However, to the author’s knowledge there is no clear empirical evidence that the Hawala banking system has been infiltrated by the transnational and/or organized crime organizations.

¹⁷ All estimated figures have a large error, the estimation procedures are very difficult to use. Hence the published figures should be interpreted with great care. Compare also conclusion1.

Austria, Belgium, Canada, Denmark, Germany, Finland, France, Greece, Great Britain, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Switzerland, Spain and the United States). On a worldwide bases in 2006 600 billion USD are estimated to be laundered coming only from the total drug (crime) business. These figures are very preliminary with a quite large margin of error, but give a clear indication how important money laundering and the turnover of transnational crime nowadays is.

From these preliminary results I draw three conclusions:

- (1) The revenues of transnational crime are scientifically extremely difficult to estimate. They are defined differently in almost every country, the measures taken against it are different and vary from country to country and it is not so all clear how large are the revenues of transnational crime.¹⁸ Moreover, we have little empirical evidence, where these dirty or “white-washed” financial means stay or are transferred to other countries.
- (2) To fight against transnational crime is also extremely difficult, as there are no efficient and powerful international organizations which can effectively fight against transnational crime¹⁹.
- (3) Hence, this paper should be seen as a first start/attempt in order to shed some light on the grey area of the revenues of transnational crime and to provide some better empirical knowledge.

¹⁸ The definition of money laundering considerably varies from country to country; also there are no international organized and harmonized effects to fight money laundering with the result that little has been done so far.

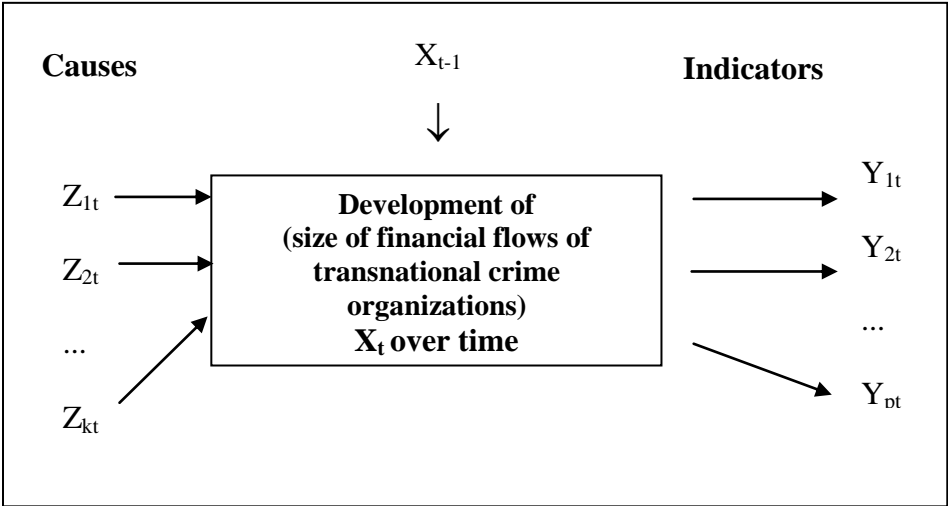
¹⁹ Some fist attempts have been made, like the FATF, or some sub organizations of the U.N., compare e.g. UNO DC (2004, 2005), FATF (2004, 2005) and FATF-GAFI (2005, 2006).

7. **Appendix: The Amount of Financial Flows of Transnational Crime Organizations – the Estimation Procedure (Latent Estimator MIMIC Approach)**

As the size of financial flows of the transnational crime organizations is an unknown (hidden) figure, a latent estimator approach using a MIMIC (i.e. **m**ultiple **i**ndicators, **m**ultiple **c**auses estimation) procedure is applied. This method has quite successfully been used to estimate the size of the shadow economy and is now shortly described.²⁰⁾ This estimation procedure is called the “model approach” which explicitly considers the multiple causes of as well as multiple indicators of the hidden variable. The method is based on the statistical theory of unobserved variables, which consider multiple causes and multiple indicators of the phenomenon (size of the shadow economy, size of the financial flow of (transnational crime organizations)). A factor-analytic approach is used to measure the hidden economy (here size of financial flows of transnational crime organizations) as an unobserved variable over time. The unknown coefficients are estimated in a set of structural equations within which the “unobserved” variable cannot be measured directly. The MIMIC (multiple-indicators multiple-causes) model consists in general of two parts; the measurement model links the unobserved variables to observed indicators. The structural equations model specifies causal relationships among the unobserved variables. In this case, there is one unobserved variable, the size of the financial flows of transnational crime organizations. It is assumed to be influenced by a set of indicators for these financial flows, thus capturing the structural dependence of these financial flows on variables that may be useful in predicting its movement and size. The interaction over time between the causes Z_{it} ($i = 1, 2, \dots, k$), the size of these financial flows X_t , and the indicators Y_{jt} ($j = 1, 2, \dots, p$) is shown in figure A1.

²⁰⁾ For a detailed discussion compare Schneider and Enste (2000), Schneider (2005), Dell’Anno and Schneider (2009).

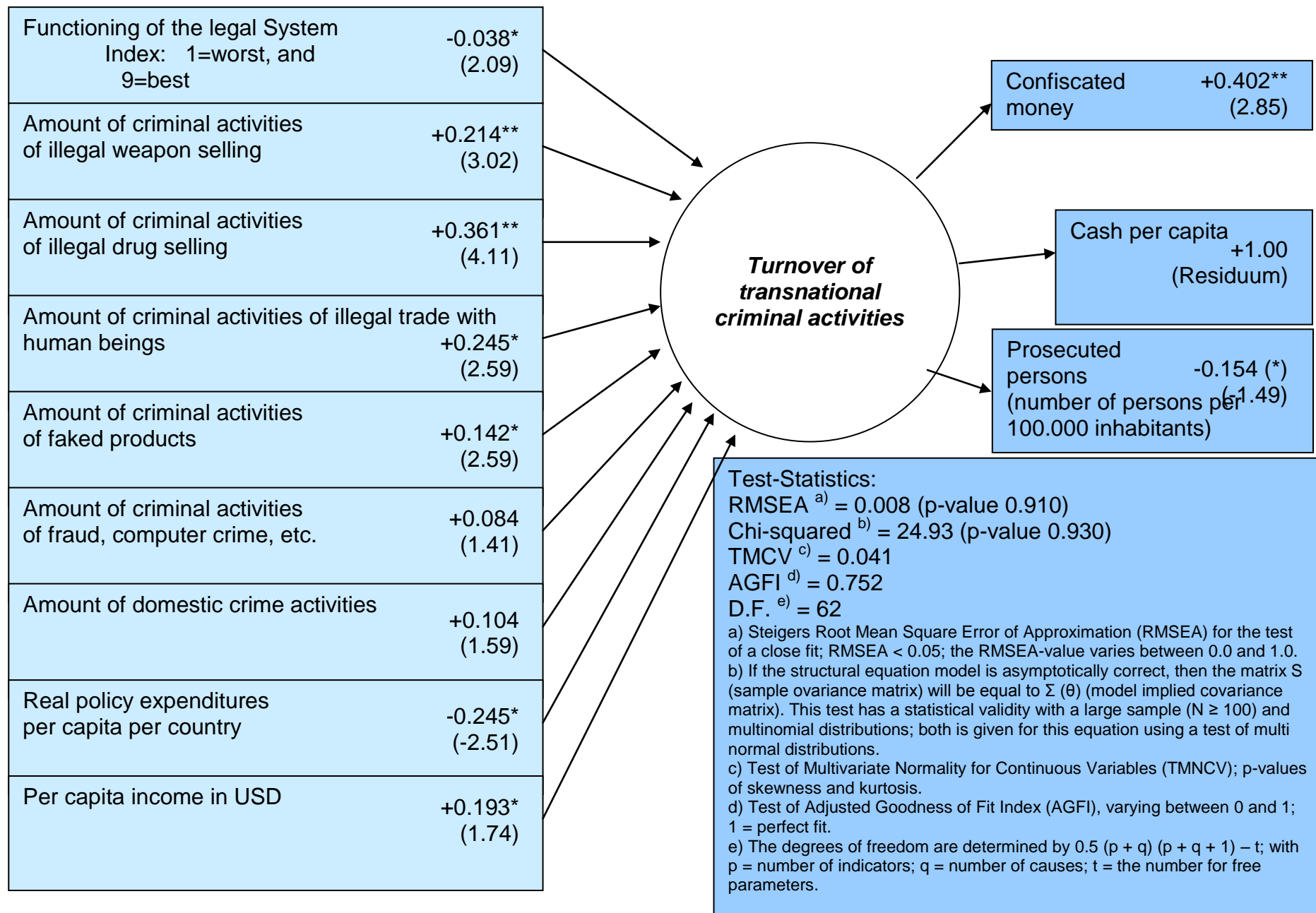
Figure A1: Development of the shadow economy (size of financial flows of transnational crime organizations) over time



Source: Prof. Dr. Friedrich Schneider

In Figure A2, the MIMIC estimation results of the turnover of transnational crime for 20 highly developed OECD countries over the period 1994/95 to 2005/06 are shown. Figure A2 clearly shows the amount of criminal activities: amount of illegal weapon selling, amount of criminal activities of illegal drug selling, and amount of criminal activities of illegal trade with human beings has the expected positive and highly statistically significant influence on the turnover of transnational crime activities. The amount of criminal activities of fake products, the functioning of the legal system, and real police expenditures per capita per country are statistically significant as well. If we switch to the indicator variables, the amount of confiscated money has the expected positive sign and is highly statistically significant. The amount of prosecuted persons has the expected negative sign, but is not statistically significant using a strict measure. In general, this MIMIC estimation shows that the single crime types like illegal weapon selling, drug selling, trade with human beings have highly statistically significant influence on the financial turnover of transnational criminal activities.

Figure 2.1: MIMIC estimation of the turnover of transnational crime for 20 highly developed OECD countries over the periods 1994/95, 1997/98, 2000/01, 2002/03, 2003/04 and 2004/05.



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