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UNIVERSITY OF CALIFORNIA, SAN DIEGO

Mapping Violence

Homicides Trends in Mexico and Brazil 1990-2010

A Thesis submitted in partial satisfaction of the requirements for the degree Master of
Arts

in

Latin American Studies

by

Jaime Arredondo Sanchez Lira

Committee in Charge:

David Mares, Chair
Alberto Diaz Cayeros
Leon Zamosc

2012

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The Thesis of Jaime Arredondo Sanchez Lira is approved, and it is acceptable in quality and form for publication on microfilm and electronically:

Chair

University of California, San Diego

2012

Dedication

I would like to extend my deepest gratitude to: the Mexican Consejo Nacional de Ciencia y Tecnología (CONACYT) for the financial support that made possible this research; the Tinker foundation provided the travel grant that allowed me to conduct research in Brazil; and the Center for Iberian and Latin American Studies (CILAS) for their trust in employing me as a Graduate Research Assistant during these years.

Dedico esta tesis a mis padres que siempre me han apoyado, gracias. A mis herman@s y amig@s en Mexico, EUA y otras partes del Mundo: L y C, Jorge, Olga y Eren, Dra. Ursula, Leo y Monica, Omar y David, Robert y Azu, Sue, Papas de Malbec, Migue y Made, JIHM, Tony, Kyle y Kristine, Cosmo y Anne, Alex y Lara, Adrian y Gris, Adam y Justin, Armando y María, Ahijada y compadres, J. Chavez, Renato, Hongo y todos aquellos que me han ayudado en estos años. Nuevamente, gracias a todos.

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Finalmente agradezco a Ubiratan Angelo en Viva Rio y André Rodrigues en ISER, por permitirme conocer de cerca la experiencia brasileña.

Epigraph

“Success has many fathers but failure is an orphan.” – John F. Kennedy

“Everything in the world has a beginning and an end” – Buddhist Anitya

“Is not about slaying the inner dragon but about riding it” – Arundhathi Subramaniam

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List of Abbreviations

- Auditoria Superior de la Federacion –ASF (Government Accountability Office)
- Batalhão de Operações Policiais Especiais or BOPE (Special Police Operations Batallion)
- Community Oriented Policing (COP)
- Computer Statistics (COMPSTAT)
- Consejo Nacional de Seguridad Publica – CNSP(National Council of Public Safety)
- D.A.R.E. (Drug Abuse Resistance Education)
- Desarrollo, Seguridad y Paz – DESEPAZ (Development, Security and Peace)
- Estrategia Integral de Prevención del Delito y Combate a la Delincuencia – ENPDyCD (Integral National Strategy of Crime Prevention and Combat)
- Fondo de Aportaciones para la Seguridad Pública – FASP (Federal Fund for Public Safety)
- Fórum Brasileiro de Segurança Pública – FBSP (Brazilian Forum of Public Safety)
- Fundo Nacional de Segurança Pública – FNSP (National Fund for Public Safety)
- Improving America's Schools Act (IASA)
- International Classification of Diseases (ICD)
- Plano Nacional de Segurança Pública – PNSP (National Plan for Public Safety)
- Policía Federal – PF (Federal Police)
- Policía Federal Preventiva – PFP (Preventive Federal Police Force)
- Problem Oriented Policing (POP)
- Programa Nacional de Segurança Pública com Cidadania – Pronasci (National Program for Public Safety with Citizenship)
- Secretaria de Seguridad Pública Federal- SSP Federal, (Federal Ministry of Public Safety)

Secretaria Nacional de Segurança Pública – SENASP (National Ministry of Public Safety)

Sistema Nacional de Seguridad Pública – SNSP (National System of Public Safety)

Sistema Único de Saúde – SUS (Single Health System)

Subsidio Municipal para la Seguridad Publica - SUBSEMUN (Municipal Subsidy for Public Safety)

Subsidio Municipal para la Seguridad Publica – SUBSEMUN (Municipal Subsidy for Public Safety)

Unidade de Polícia Pacificadora – UPP (Pacifying Police Unit)

Unified Crime Report (UCR)

United Nations Office on Drugs and Crime (UNODC)

World Health Organization (WHO)

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ABSTRACT OF THE THESIS

Mapping Violence

Homicides Trends in Mexico and Brazil 1990-2010

by

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Master of Arts in Latin American Studies

University of California, San Diego, 2012

Professor David Mares, Chair

Latin America has become one of the most violent regions in the world. Public Safety is now among the principal citizen's demands in some of those countries. This paper begins with a consideration of the role of police in answering the demand for public safety by local populations, and its role as a tool for exercising the state's monopoly of legitimate violence within a territory. Two relevant countries in the region, Brazil and Mexico, have undertaken police reform throughout these two decades, emphasizing lately a combination of new social and policing strategies. However, public opinion and the demand for solutions vary accordingly to changes in general crime trends; previous studies have used a methodology to understand such phenomenon. Homicides provide a good indicator of violence, since its measurement is based upon a common international methodology of mortality public health data. This research develops a new comparison approach that takes into account national

tendencies, historical averages and the stability across time of homicides rates at the federal state level in Mexico and Brazil. These trends draw a general picture of violence that is helpful for future public policy discussions. The correlation between violence levels and stability of crime hold for the Brazilian case but not for Mexico, where we can observe a shift of violence to federal Border States and cities. The lack of proper crime statistics and a more detailed conceptualization of reform efforts should be address in future studies to fully understand regional tendencies and tailor local solutions.

INTRODUCTION

According to the 2011 Latinobarometro data, Public Safety is among the main problems for citizens in Latin America¹. This perception can be partially understood by the recent United Nations Office on Drugs and Crime (UNODC) Report on Homicides which shows some countries experiencing rates more than double the world average². As a response to this crime problem several projects of police reform are being implemented throughout the region on local and national levels. These reforms focus on a range of issues such as human rights, accountability, training, community policing, etc³.

The two most populated countries in the region, Brazil and Mexico, have created national systems of public safety that help to coordinate crime reduction strategies among the different levels of government. The federal states in both countries hold an important role preventing crime on their local population; they dedicate resources from their own finances, control a significant number of police officers and are recipients of federal funds that help to implement new police reform programs. While the Brazilian case is a local solutions with federal help approach, the Mexican apply a framework of federal reforms with local help. Policies have been implemented and changed several times; Rio's *Unidade de Polícia Pacificadora* – *UPP* (Pacifying Police Unit) is a good example of this, and since 2007 the Mexican

¹ Latinobarómetro, opinión pública Latinoamericana

² UNODC, Global Study on Homicide 2011

³ Bailey and Dammert (2005)

federal government has promoted what has been titled a *Nuevo Modelo de Policía*⁴ (New Model of Police) across municipalities and states. These efforts to reform police and reduce violent crime seem to be affected by other structural factors such as inter-cartel drug trafficking violence or particular socio-economic conditions.

In Latin America citizens assess the importance of public safety as the main national problem differently, previous literature⁵ in public opinion has developed a framework to understand the gap between perception and victimization; their findings focus on the *original and relative positions* and *speed of change* of their respective homicides rates. The official statistics on crime are complemented with Latinobarometro public opinion surveys that have regularly included questions pertaining to “victimization” of the population⁶.

Violence is measured through homicides rates on a national and federal state level, which are based upon a common methodology under World Health Organization (WHO) standards. This study creates a new approach to map and document trends in homicides rates per 100,000 inhabitants as the comparing variable across regions and time. Standardized rates from each federal state will be compared to its yearly national average in order to track their relative position on the country across time; secondly a measure of self-progress will be developed, with each state

⁴ Manual, Nuevo Modelo de Policia. SSP Federal. Mexico.

⁵ Dammert and Lagos (May 2012). La Seguridad Ciudadana El problema principal de América Latina.

⁶ In 2008, when citizens were asked on how violent they consider their country to be, Brazil and Mexico ranked third and fourth respectively in the region. On a scale from 1 less violent to 10 very violent, Brazil scored 6.3 and Mexico 6.2

comparing to its historical average rate to detect any improvement across time; finally the stability of crime estimated by the Coefficient of Variation will be used to identify possible endemic violence. The results will not only vary across countries, but within states across time.

The WHO emphasizes the need for studying violence through the lens of public health, it is necessary to understand the causes and correlations of violence as well as factors that might be modifiable through intervention efforts. A serious focus needs to be taken in preventing violence, since it might prove more cost efficient, careful interdisciplinary studies must be undertaken with an emphasis on creating contextual tailored solutions to particular cases.

The lack of more reliable crime statistics and a detailed catalog of recent police reform and political changes hinder the possibility of making clear public policy recommendations. These national trends in homicide will be helpful in future police reform studies, since they provide a broad picture of violence that can lead to more detailed statistical analysis. Several patterns of violence emerge, for example, Mexican violence seems to be associated to the border and rural regions, while Brazil shows a more chaotic pattern of urban violence. These differences must be understood at a local level, given their particular political and socio-economic conditions, allowing for multidisciplinary solutions that focus on preventing the causes of violence.

Chapter 1. POLICE AND REFORM

1.1. Police and Policing

Police forces are not far from the values of society and the political system in which they rest, not only they are the clearest reflection of the representation of the State but also part of a system of social control⁷. Their primary task is to provide safety to the citizens of a community, both personal and patrimonial. The State, according to Max Weber, holds the monopoly of legitimate physical violence over a given territory⁸. In the Latin American context of high income inequality the role of the police as a confronting and divisive undemocratic public force can partially help to explain the historical low rates of trust that its citizens have for them; Mexico averages 77% of low and no confidence on the police while Brazil follows closely with 65% negative opinions on average between 1995 and 2010⁹.

The modern police forces are the result of an industrialization process and an increase in new social problems brought by urbanization; previous literature considers two broad historical models of police, the continental French and the Anglo-Saxon British model¹⁰. Created in 1829, the British police model was replicated by other countries; its officers were uniformed and specialized in crime control, more proactive than reactive, and they were isolated from political discussions since their legitimacy

⁷ Cao y Zhao, 2005

⁸ Weber, 1919

⁹ Latinobarometro corporation, n.d. years 1998,1999

¹⁰ Bailey and Dammert 2005, Reiner 1992

rested in Parliament. The French system gave a greater range of action to their police forces, to include fire prevention between their actions and attention to public health problems and founded on a more centralized scheme. They also had a uniform that characterized them, blue, patrolled the streets on foot and were armed with sticks and swords.

We must differentiate between police and policing¹¹, the latter being the strategies follow to assure social order and reduce crime by the officers and their administrators. In this sense the police in the U.S. experienced three different eras of policing that could be related to current phases of police strategies in Mexico and Brazil¹², each of them with a dominant factor: political, reform and community policing. The political era, from 1840 to 1900, was characterized by the existing connections between politicians and the police with a total dependence on resources and authority. This close relationship gave rise to corruption involving the laxity toward certain laws, discrimination against minorities and even participation in electoral fraud. Their main strategies were patrols on foot, and some of their functions included not only social control and reduction of the crime but also the provision of other social services¹³.

¹¹ Bayley and Shearing, 2001

¹² Kelling and Moore, 1988

¹³ Monkkonen, 1992

During the period between 1930 and 1970, the reform era gave rise to several changes in American policing¹⁴, mainly the elimination of political support as a source of legitimacy and their transformation into law enforcement agencies; a civil service system was implemented to recruit or dismiss officials, including the heads of police. Compliance with the law became the main guideline of action from corporations and with that in mind they became autonomous and public organizations¹⁵.

Under this reform era the work of the police became standardized with crime control activities and the apprehension of criminals, if the opportunity allowed it, all under a central command and control system. Technological advances enabled the implementation of new strategies such as preventive patrol strategies, emergency call centers¹⁶, radio communication, and even a single system for reporting crimes¹⁷. However, these changes were not sufficient to reduce fear of crime among the population, and minorities were still experiencing abuse and discrimination by the police. The Vietnam War, student movements, budget cuts and the growth of private security led to the need for further changes¹⁸.

Community policing strategies were introduced in 1980 with a combination of new and old techniques such as foot patrol. One of the main goals from the reform era

¹⁴ Two police chiefs may be pointed as the axes in the implementation of these reforms: August Vollmer Police Chief of Berkeley and O.W. Wilson responsible for the transformation in the FBI.

¹⁵ Kelling and Moore, 1988

¹⁶ During this time the emergency number 911 was created for the attention of phone calls and emergencies.

¹⁷ The Unified Crime Report (UCR) coordinated by the FBI.

¹⁸ Kelling and Moore, 1988

was the importance to use information as a way to track and maximize the efficiency of the police to reduce crime. The goal was to address problems in a comprehensive manner, not as isolated events; a certain margin of discretion should be used by the police officer, turning it into a problem – oriented approach. Police should cooperate with the community to identify not only problems but also possible solutions that help reduce the criminal rates of the community. Organizational decentralization is fundamental in the new strategies of community surveillance, with stations and police patrolling at the district level, always under the supervision of senior officers¹⁹.

All these policing strategies experienced by the U.S. model can be applied to current processes on the police forces of Brazil and Mexico. For example, the *UPP* model rests on some elements of community policing, where commanders exert a certain degree of flexibility according to the local conditions in their geographical area²⁰. They have undergone a transformation where the professionalization in the investigation of the crime changed their operational procedures; some of their units are more specialized and assimilated to military corps²¹, a good example of this would be the *Batalhão de Operações Policiais Especiais* or *BOPE* (Special Police Operations Battalion)²². Other groups such as the Mexican *Unidades de Analisis* (Units of Analysis)²³ concentrate on the generation of intelligence and patterns of crime

¹⁹ idem

²⁰ Leonardo Zuma on Ferreira and Britto, 2010

²¹ Frühling H. 2012

²² Lia de Mattos Rocha on Machado da Silva, 2008

²³ Nuevo Modelo de Policía, SSP Federal, México, 2008

hotspots. Some of the reasons that can explain these changes in the field of public safety are the low effectiveness of governments in reducing criminal rates in the last decade, budgetary crisis and as mentioned before the little citizens confidence in their police²⁴.

1.2 Reforms

Many of the current police reform strategies that are implemented in Mexico and Brazil find their inspiration in other countries, mainly the USA. Successful efforts such as Community Oriented Policing (COP), Problem Oriented Policing (POP), “Broken Windows”, Hotspots and COMPSTAT, internal and external accountability are the result of top to bottom approaches combined with and outside pressure²⁵.

Certain practices of US police departments are replicated in national crime and drug addiction programs; this is the case of D.A.R.E. (Drug Abuse Resistance Education) that was created in 1983 by the Police Department of the city of Los Angeles. Here police officers trained in teaching methods and counting with the experience in the streets, go directly to classrooms to teach courses of crime prevention. The program operates in 43 countries as Brazil, Colombia and Mexico, and is an example of preventive community policing²⁶. In 1994, President Bill Clinton created the initiative *Improving America's Schools Act (IASA)* which included resources for preventing drug abuse and violence programs inside and outside schools,

²⁴ Bayley and Schering, 2001

²⁵ Bailey, 2008

²⁶ Cirigo, 2007

due to the high number of crimes and the increased use among students of tobacco, alcohol and illicit drugs²⁷.

Other cases also remit to successful Latin American experiences such as the Colombian city of Bogota, where a strong emphasis on urban modification and civic culture helped reduce homicide trends. The city experienced during the administrations of Antanas Mockus and Enrique Peñalosa, 1995-2003, a 27% reduction in the rate of homicides per 100,000 inhabitants. This multidisciplinary approach included the construction of new public spaces in peripheral areas such as parks, *ciclopistas* (bicycle roads) and libraries, which allowed the recovery of those areas taken by illicit activities such as drug dealing or the sale of counterfeit articles. Programs like *Obras con Saldo Pedagógico* (Works with pedagogical balance) were designed in neighborhoods (barrios) with the participation of the citizens in order to contribute to the construction of social networks. Not only streets and public transport were modified, but also public spending was reoriented, which allowed not only the implementing of these projects but also assured proper maintenance and management²⁸.

Two theories are behind the urban modification type of programs: The first one, crime prevention through environmental design, establishes that social and situational factors impact on the crime rates of a particular geographic area; risk

²⁷ Improving America's Schools Act, Pub. L. No. 103-382. Uses 103rd Cong. October 20, 1994. Title IV - Safe and Drug-free Schools and Communities. Improving America's Schools Act, Pub. L. No. 103-382. USE 103rd Cong. 20 October, 1994.

²⁸ Gerard and Ceballos, 2009

situations such as the lack of illumination, police surveillance and marginalization among others, must be taken into account in the design of crime prevention policy²⁹. Other theory that has sometime wrongly named as *Zero Tolerance*, is the *Broken Windows* approach developed by James Wilson³⁰; it mentions that the attitude of "nobody cares" generates an abandonment of public places in a community, leading to a worsening of conditions and resulting in the future invasion of that particular space by criminals. In 2002 the Mexico City government hired former Mayor Giuliani to implement a similar strategy based on the reforms undertaken under his administration in New York City³¹.

Scholars agree on a set of issues that must be addressed under police reform: proper recruitment, selection and training of police officers, dignified salaries, benefits and prospects of improvement within the corps, clear procedures of action, proper tools and resources to do their job, and finally internal and external accountability measures³². Many of these elements are present either in Brazil or Mexican police forces, but with different degrees of implementation. National Systems of Public Safety were implemented in both countries in order to coordinate the efforts of the three levels of governments and develop national strategies against criminality and promote police reform. At the local level some municipalities and federal states have developed particular approaches to police reform, in Mexico the city of Chihuahua has

²⁹ Walsh and Ellen, 1999

³⁰ Kelling and Wilson, 1982

³¹ Arroyo Mario, 2003

³² Sabet, 2012

implemented changes that have awarded it the accreditation of a U.S. based police organization, the Commission on Accreditation for Law Enforcement Agencies (CALEA)³³, In Brazil, the state of Minas Gerais implemented in 2002 a COP program for the city of Bello Horizonte, in order to reduce the level of urban homicides.

Both countries have similar structures of police³⁴, with federal force that represent less than 3% in Brazil and 8% in Mexico of the total forces. In Brazil the task of public safety is conferred to the states, although some municipalities have their own corps, but represent only 12% of the total national force; in Mexico only 232 municipalities have more than 100 policemen³⁵, they constitutionally hold the task of providing public safety, although this task is shared in many occasions with the federal state. At a state level, both countries hold two corps, one dedicated to preventive policing tasks³⁶ and the other for investigative activities³⁷, each one with their own chain of command, rules and procedures. In 2010, the state police forces in Mexico added to 225,349, and represented close to 60% of the total national force, while the Brazilian state police registered a total of 419,633 elements³⁸. These structures of police coordinate their reform efforts, federal financing projects and crime reduction strategies through their respective National Systems of Public Safety.

³³ Sabet, 2012

³⁴ Pereira in Kingston, 2008; Reames, 2003

³⁵ The total forces in the municipal level accounted in 2010 to 160,967 elements, according to SSP numbers.

³⁶ *Policía Estatal* in Mexico, and *Policia Militar* in Brasil

³⁷ *Polica Judicial* or *Ministerial* in Mexico, and *Policia Civil* in Brasil

³⁸ Fórum Brasileiro de Segurança Pública, 2011; National report to Congress 2010, SSP, Mexico

The World Bank has indicated that there is no single solution to reduce violence but rather a multilateral approach must be taken, risk factors must be identified and tailored solutions implemented at a local level³⁹. Not only environmental factors must be dealt with, but also a reform of the criminal justice and the police should be included, with more COP strategies rather than reactive ones. Preventing violence is more cost-efficient rather than repressive politics, we should address the problems at a municipal level since it's the level of government closest to the citizen's needs; states must complement its police action with social programs that can help reduce social tension in the community. All these efforts must be based on empirical data that can be systematized and evaluated for drawing successful experiences among countries and regions.

³⁹ World Bank, 2006

Chapter 2. MEXICAN AND BRAZILIAN REFORMS

2.1. Coordination systems

2.1.1. Mexico

In 1994, President Zedillo created the *Sistema Nacional de Seguridad Publica* – SNSP (National System for Public Safety) to coordinate the public security efforts among the three levels of government, laying the foundation for a national policy that has changed since its conception. Resources are allocated to the states through the *Fondo de Aportaciones para la Seguridad Publica* – FASP (Federal Fund for Public Safety), these allowed the standardization of certain tasks of security between the different orders of government⁴⁰. Some of the new policies included a national encrypted telecommunications system⁴¹, a scheme for the exchange of national and local data bases that included the register of public safety personnel, weapons and equipment, criminal statistics as well as other information to support the administration of Justice.

These steps mark the beginning of a coordinated system of security, however, the national records began to be collected in 1997 and federal resources for security were not assigned until the year 1999. In the year 2000 President Fox creates the *Secretaria de Seguridad Publica Federal*- SSP Federal, (Federal Ministry of Public Safety), to coordinate the efforts of the national government and the *Policía Federal*

⁴⁰ Bergman, 2007

⁴¹ TetraPol system, from the 500 sites originally scheduled only 75% is operational

Preventiva – PFP (Preventive Federal Police Force). Under the administration of President Calderon the PFP was fused to other federal agencies under a single chain of command and renamed *Policía Federal* – PF (Federal Police)⁴².

The FASP was created with the aim of helping federal states and municipalities in strengthening their capacities of fight against crime through investment in human resources, technology and infrastructure. The funds are distributed by an annual fix formula determined each year in a session of the *Consejo Nacional de Seguridad Publica* (CNSP)⁴³, all states are entitled to such resources. In 2007, an analysis by the *Auditoria Superior de la Federación* – ASF (Government Accountability Office) concluded that the SNSP has failed to achieved the expected results in the different programmatic axes; the lack of effective coordination between the three levels of Government has prevented a proper joint application of resources, giving place to an uneven development of the police and a lack of shared public policy⁴⁴.

Two new financial mechanism were created under the current administration of President Calderon: the first one is the *Subsidio Municipal para la Seguridad Publica* - SUBSEMUN (Municipal Subsidy for Public Safety) created in 2008, its main goal is to promote the New Model of Police designed by the SSP⁴⁵. The second financing

⁴² Arredondo, 2010

⁴³ It includes the President, Ministries of Interior, Defense, Navy, General Attorney, Public Safety, and the 31 governors and chief of government in Mexico City. Recently, five citizen representatives were chosen to participate in the sessions of the CNSP but not to vote

<http://mexicosos.org/blog/entrevista-alejandro-mart%C3%AD-con-milenio-tv>

⁴⁴ ASF, 2007

⁴⁵ Arredondo, 2010

program is the *Policia Estatal Acreditavel* (Creditable State Police Force), directed to state governments in order to implement the New Model of Police design by the federal government⁴⁶.

2.1.2. Brazil

In Brazil the administration of Fernando Henrique Cardoso created the *Secretaria Nacional de Segurança Pública* – SENASP (National Ministry of Public Safety) in 2000⁴⁷, to coordinate and articulate the national policies against crime expressed on the *Plano Nacional de Segurança Pública* – PNSP (National Plan for Public Safety⁴⁸). This new institutional framework marked the beginning of the coordination between the federal, state and local governments. The plan included the creation of an intelligence system, the reduction of urban crime, police training and equipment, among other actions⁴⁹.

The program included the creation of the *Fundo Nacional de Segurança Pública* – FNSP (National Fund for Public Safety) as a financial mechanism dedicated to allocate resources to states and municipalities to achieve the goals set on the PNSP *Fundo Nacional de Segurança Pública* - FNSP⁵⁰. The states and municipalities access to the resources after the signature of agreements with the federal government throughout the *Ministério da Justiça* (Ministry of Justice). Unlike the Mexican case,

⁴⁶ SSP Federal, 2011

⁴⁷ Partially as a response to the police failure of the hijacking of Bus 174, Hinton 2006

⁴⁸ Ministério da Justiça. Secretaria Nacional de Segurança Pública. Instituto Cidadania.

⁴⁹ Emilio Enrique dellasoppa in Bailey and Dammert, 2005

⁵⁰ Grossi, 2004

not all have access to these resources; those interested must present their projects and be subject of analysis by a *Conselho Gestor*⁵¹ (Management council) in order to approve it, all aligned with the goals set by in the PNSP. Those states that wish to receive resources must present a proper *Plano Estadual de Segurança Pública* (State Plan of Public Safety), indicating those actions necessary to reduce criminality on their region, using as an indicator the reduction of the homicide rate per 100,000 inhabitants.

2.2. The end of the decade

2.2.1. Mexico

Within the National Systems of Public Safety both governments have implemented new national plans against criminality since 2007, each of them with a bundle of social actions and police reforms. In Mexico the *Estrategia Integral de Prevención del Delito y Combate a la Delincuencia* – ENPDyCD (Integral National Strategy of Crime Prevention and Combat) has included the cooperation of the SSP Federal with other national ministries such as Social Development, Education and Health.

Three projects constitute the core of social actions: *Escuela Segura* (Safe school), similar to D.A.R.E. in Los Angeles; *Recuperación de Espacios Públicos* (Recovery of Public Spaces), inspired on the Colombian modification of urban spaces; and finally *Salud Solo sin Drogas* (Health only without Drugs), a preventive approach

⁵¹ It includes only Federal government authorities.

to substance abuse. The second pillar in the federal government's strategy focuses on professionalization, selection criteria and anti-corruption controls, equipment modernization and procedural changes, all based on standards and the best practices of law enforcement at the international level⁵²; this federal solutions with local help approach is expressed on the implementation of a *Nuevo Modelo de Policia* (New Model of Police⁵³) that promotes a unified police reform throughout the country.

The implementation has been gradual, first through the creation of a single body of police at the federal level, and then followed by legal reforms that allow its implementation at the municipal level and state level⁵⁴. It fell to the Federal SSP, the design of this new scheme that would make it possible to improve the performance of all the police forces of the country, arguing that the previous legal framework duplicated police efforts, all under obsolete policing strategies. This new model sets in motion a civil career system for police forces at every level of government, with a new administration and organizational schemes and a strong use of new technological tools, particularly emphasized on the PF⁵⁵.

The *Sistema de Desarrollo Policial – SIDEPOL* (Civil Career Police System) seeks to establish clear conditions for entry, training, promotion and separation of those who are part of the institutions of public security. The objective is to achieve

⁵² Bailey, 2006; Sabet 2012

⁵³ SSP Federal, 2008

⁵⁴ Arredondo, 2010

⁵⁵ Under the Merida Initiative the Federal Police has received Blackhawk UH-60M helicopters from the US Government. SEGOG, SRE, Mexico, 2012

professional development to the interior of the corporations, generating attractive conditions to dignify their work⁵⁶. A new technological system called *Plataforma Mexico* (Mexico's Platform) was implemented in more than 500 police stations across the country all under a *Sistema Unico de Informacion Criminal* – SUIC (Single System of Criminal Information) for the operation of criminal information in real-time, generating geo-referenced criminal maps, and sharing homogenized databases⁵⁷ at the national level at all times.

2.2.2. Brazil

A new national program was created at the beginning of President Lula second term, the *Programa Nacional de Segurança Pública com Cidadania* – Pronasci (National Program for Public Safety with Citizenship) that includes 94 particular actions⁵⁸; as in the Mexican case it also combines social programs with police reforms. The Ministry of Justice joins other actors, federal and local, such as the Ministry of Culture, Sports and Cities, and universities as the Fundação Getúlio Vargas; they tailor particular solutions to crime, taking into account current programs by municipalities and states, resulting in the local solutions with federal help approach.

Among some of the social programs we can find: *Mulheres da Paz* (Women of Peace), a community approach to develop local leaderships that can help identify risk situations and prevent violence; the project *Urbanização* (Urbanization) that looks to

⁵⁶ Arredondo, 2010

⁵⁷ A single police report, Reporte Unico de Policia, was created for this purpose

⁵⁸ Ferreira and Britto, 2010

recuperate abandoned public spaces by investment in infrastructure; or the *Programa de Educação Profissional para Jovens e Adultos* – Proeja (Professional Educational Program for Young and Adults), that offers classes to prepare for admission exams into the national educational system.

Related to police reform the PRONASCI⁵⁹ includes the creation of local management organizations such as the *Gabinetes de Gestão Integrada Municipal* – GGIM (Municipal Integral Management Cabinets) that help coordinate the efforts of the different police forces. It created a *Bolsa -Formação* (Training Fund) that complements the salary of those officers⁶⁰ that take courses offered by the Ministry of Justice, within the *Rede Nacional de Educação a Distância* – (National Network of Long Distance Education) or a post graduated education, through the *Rede Nacional de Altos Estudos em Segurança Pública Nacional* (National Network of High Studies in National Public Safety). The program also looks to improve the living conditions and security of police officers by the creation of a *Plano Habitacional* (Housing projects)⁶¹. These programs are not promoted equally along the country, but rather each municipality and state sign particular agreements to implement all or some of them according to the particular needs⁶².

⁵⁹ Idem

⁶⁰ In Mexico the increase of salaries given by states and municipalities under the federal agreements go to those police officers that are trained and organized under the New Model of Police

⁶¹ In Mexico the state of Nuevo Leon has also opted for this strategy to protect and recruit new officers

⁶² 150 municipalities and 22 federal states according to information by the Ministerio da Justica

An example of cooperation within PRONASCI between the federation, state and municipality, is Rio de Janeiro's *Unidade de Polícia Pacificadora*⁶³ - UPP (Police Pacification Unit). The local program was developed by the government of Sergio Cabral and the state Secretary of Public Safety, Jose Mariano Beltrame, with "intelligence, integration, accountability and management". It keeps in mind the particular dynamics of violence in the city due to Drug Trafficking Organizations (DTO) activities and the need to reoccupy the territory abandoned by the State⁶⁴.

The program initiated in the Favela of *Santa Marta* in the south part of the city, the first action is an "occupation" operation by the state police tactical groups, such as BOPE⁶⁵, that confronts the violent DTO until they can hold safely the territory; at some other Favelas such as the *Complexo do Alemão* the Brazilian army has participated in the operations⁶⁶ and even remained in place for a long period of time to assume public safety tasks⁶⁷. The second action within the UPP model is the implementation of COP strategies with police officers that have recently graduated from the academy, on an effort to gain the trust of the local population and identify possible problems and solutions⁶⁸. A third state called UPP Social⁶⁹, coordinates the

⁶³ <http://www.upprj.com/>

⁶⁴ Beltrame on Ferreira and Britto, 2010

⁶⁵ Wallace de Lima on Ferreira and Britto, 2010

⁶⁶ Exército inicia cerco ao Complexo do Alemão e à Vila Cruzeiro.
http://www.bbc.co.uk/portuguese/noticias/2010/11/101126_rio2_rc.shtml

⁶⁷ PM começa a substituir Exército em comunidades do Complexo da Penha nesta quinta-feira.
<http://noticias.r7.com/rio-de-janeiro/noticias/pm-comeca-a-substituir-exercito-em-comunidades-do-complexo-da-penha-nesta-quinta-feira-20120531.html>

⁶⁸ Leonardo Zuma on Memórias do Pronasci

municipal actors involve in the provision of social services to improve the quality of living of the *moradores da favela* (favela residents).

The program UPP has received high media coverage not only within Brazil but also internationally since homicides rates have decreased recently in Rio. Violence was traditionally the result of three causes: police brutality, collateral damage and inter-cartel rivalry⁷⁰. The UPP has mainly concentrated on areas of former domination of the DOT, however, there is a recent and troubling surge of *Militias*, former policeman or army members, that find their origins on the *policia mineira* or vigilante groups in favelas⁷¹. In 2011, a judge was killed in the neighboring area of Niteroi with the complicity of active police officers, she was investigating the action of these *Militias*⁷²; such events should remind us that not only the DOT, but also state actors, create violence.

The UPP model is not new in Rio, under the administration of Anthony Garotinho as governor, and Luis Eduardo Soares as a member of the State Ministry of Public Safety, the *Áreas Integradas de Segurança Pública* – AISP (Integral Areas of Public Safety) were created; they divided the city on 34 managing zones⁷³. In

⁶⁹ <http://www.uppsocial.org/>

⁷⁰ Machado, 2008

⁷¹ Wania Amelia on Machado 2008

⁷² El homicidio de una jueza brasileña pone de manifiesto la corrupción policial.
<http://www.amnesty.org/es/news-and-updates/sospecha-policia-tras-emboscada-armada-jueza-brasilena-asesinada-2011-08-16>

⁷³ Hinton, 2006

conjunction with a local NGO⁷⁴ the *Grupamento de Policiamento em Áreas Especiais* – GPAE (Special Areas Policing Squads) was implemented on the favela *Pavão-Pavãozinho*, which is among the first to be occupied recently by the UPP model. These reforms were soon abandoned in future administrations, as politicians develop new plans to differentiate from their political opponents, this created instability and short term solutions to criminality⁷⁵.

⁷⁴ Viva Rio

⁷⁵ Hinton, 2006

Chapter 3. ANALYZING TRENDS

3.1. A Public Opinion Analysis

Since 1995, the Latinobarometro has conducted a series of questions to assess the importance of Public Safety as one of the main problems of the country. It is important to measure perception since victimization surveys show that fear of crime influences the citizen's actions, which avoid going out at night alone, with expenditures on time and money related to preventive crime measures, such as private security or the creation of neighborhood watches⁷⁶. This can help to understand the “multilateralization” process in reform efforts, where the task of security is not exclusive of the government, but relies on civil society organizations and the privatization of the service⁷⁷.

The Latinobarometro survey for all Latin American countries for the end of the 90's shows an increase on both victims and the importance that citizens on the region give to public safety as a problem in the country. The following decade sees a dramatic increase on the relevance of the problem, but a consistency of people that answers that he/she, or a family member, has been victim of a crime⁷⁸.

When we disaggregate the information and concentrate only on the Brazilian and Mexican case the picture is more complex. For Brazilians, the percentage of

⁷⁶ Instituto Ciudadano de Estudios Sobre la Inseguridad, A.C (ICESI), Mexico

⁷⁷ Bayley and Shearing, 2001

⁷⁸ Latinobarometro, 2011

citizens for whom Public Safety represents the main problem in the country ranges generally below 20%, health and employment come first even if sometimes the victimization trends point in the opposite direction. For Mexicans security as a problem has experience a steady increase since the year 2000, an in the year 2010 more than 35% of those surveyed considered it as the main problem, even when the data related to victimization shows a decline⁷⁹.

Other authors⁸⁰ provide a possible explanation of the difference between the assessment of the problem of public safety as the main problem in the country and the victimization data provided by the Latinobarometro. The first part is related to the relative weigh of the issue as the country is still struggling to achieve other social economic improvements (relative position); the second factor has to do with the initial level of crime that societies have (original position), we need to consider the historical averages of crime rates and study its behavior; finally the speed of change must be understood. These elements help to create within public opinion, a “climate of fear”⁸¹ feed by the mass media and an effect of “Spiral of Silence”⁸².

High criminality can become a national agenda even when citizens might personally experience low local rates of victimization. It has been studied in social network analysis that the actions of individuals are based on the perception of the

⁷⁹ Idem

⁸⁰ Dammert, May 2012.

⁸¹ Idem

⁸² Neumann 1974

entire network; the creation of a common knowledge of high crime could be possible due to a powerful broker as the media that fills the holes in the creation of the personal opinion⁸³. The challenges for the federal and state governments are not only to reduce crime rates, but also to modify public opinion perceptions.

To complement the information by victimization surveys and the need for reforms we need to understand not only crime quantities but rather the type of crime. This creates several problems since better crime data collection is needed throughout the Latin American region; some studies on Mexico have documented errors and lack of consistency in the data⁸⁴, while in Brazil crime data it is only available for the last few recent years⁸⁵. Property and violent crime numbers can be affected by the lack of police report, low citizen reporting⁸⁶, and particular geographical and socio-economic conditions⁸⁷.

The Figure 1 compares three relevant Latinobarometro questions for public safety with national homicides rates: victimization, public safety as a problem, and no trust in the police. In the Mexican case it seems that the low or no trust on police reduces after 2002, just as victimization and homicides rate do. However the problem of public safety as the main problem in the country has an erratic behavior, with ups and downs independently of victimization. Previous research in Mexico has showed

⁸³ Shivarajan, 2011

⁸⁴ Arango and Lara, 2004; Arredondo, 2010

⁸⁵ Since 2007 the Instituto Brasileiro de Seguranca Publica

⁸⁶ In Mexico the hidden crime figure has steadily hold around 85% according to the ICESI.

⁸⁷ Levitt, 2004; Nolan 2004

that violent crimes influences more the citizens perception on insecurity⁸⁸, possible explaining the tendency showed after 2007 when homicides rates have increased rapidly to levels experienced 15 years before.

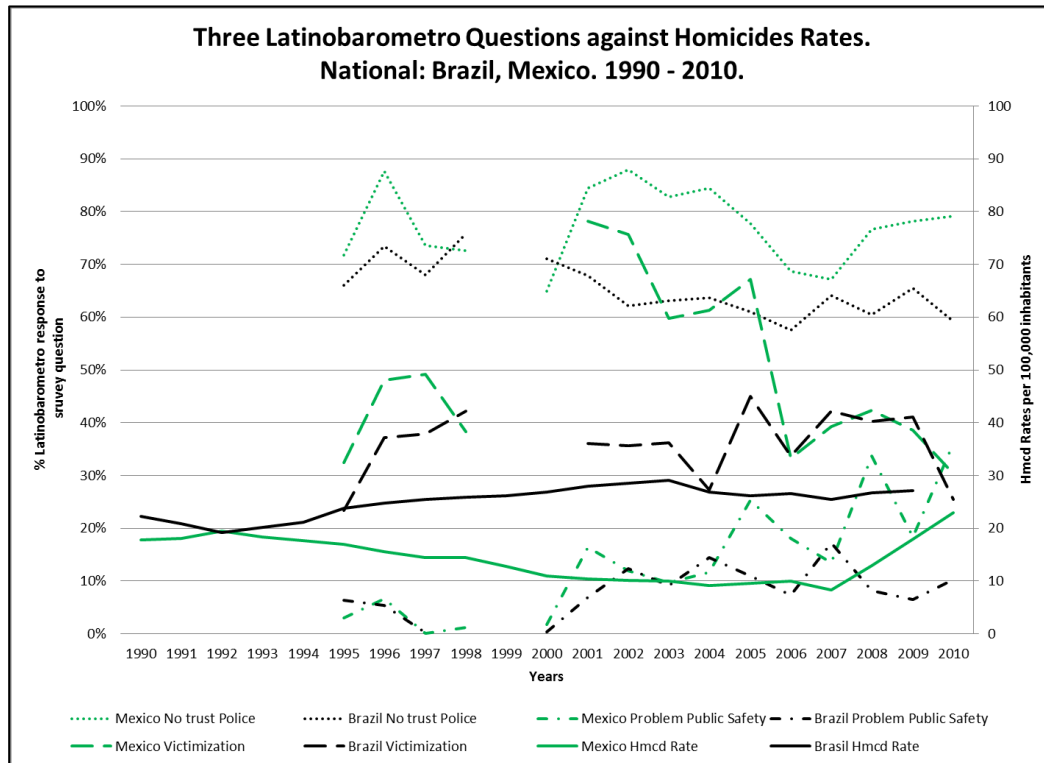


Figure 1. Homicides Rates and Three Latinobarometro questions 1990-2010.

Sources: Latinobarometro corporation, National surveys data, Brazil and Mexico, 1995 – 2010 / National Systems of Health, Basic data, Mortality due to external causes, Homicides, Brazil and Mexico, 1995 – 2010.

The Brazilian picture is similar to Mexico in early 1995-1998 data, victimization and low trust on police are high and around similar levels. However after the year 2000 the picture differs, as national homicides rates tend to be higher and

⁸⁸ Bergman, 2007

more stable than the Mexican case; it is interesting to observe that public safety as a main problem for the country has remained lower and relatively stable in Brazil throughout that period. It becomes necessary then to comprehend homicide trends better, not only at a national level but comparing states of the federation, since prosecuting these crimes are legally their responsibility in the majority of cases.

3.2. Violence

Homicide is considered an extreme criminal offense both in Brazil and Mexico. As a method of crime comparison between regions, homicides are commonly considered to be a less biased indicator, because it is legally reported and better documented by local authorities⁸⁹. Using homicides can allow us to draw contrasts not only between countries but within regions⁹⁰, comparing at a rate per 100,000 inhabitants on the national, state and in some cases municipal level. There are at least two sources of homicide data in Brazil and Mexico, the first one is the information administered by the Justice System, which is recorded respectively, by individual states' Ministries of Public Safety in Brazil and the General Attorneys Ministries in the Mexican case. Previous work has shown that these numbers can vary significantly across agencies⁹¹.

The second source of data is from the central federal Ministries of Health, within their statistical systems. Homicides affect the mortality rate of a country and

⁸⁹ World Bank, 2006; UNODC, 2011

⁹⁰ UNODC, 2011

⁹¹ Arango, 2003; Arredondo, 2010; Cano and Ribeiro in Da Cruz, 2007.

are considered by the federal government as a public health problem. In Brazil, the central Ministry of Health collects the mortality statistics compiled by the *Sistema Único de Saúde – SUS* (Single Health System) on a single unified online Data System - DATASUS⁹². The rate per 100,000 can be ordered by external causes such as accidents, suicides, or violence, and by particular geographical area and year. There is always the risk that death can be wrongly classified when establishing the intentionality of the deceased, which hinders the quality of the data. This could help explain some seemingly incongruous state rate changes, which I will explore later⁹³.

Mexico has a similar online Data System on Health Information, *Sistema Nacional de Informacion de Salud – SINAIS* (National Health Information System)⁹⁴, which reports mortality statistics⁹⁵. These two national sources⁹⁶ use the International Classification of Diseases (ICD), whose purpose is to present a unified methodology to register and code health data such as mortality numbers to compare between countries, areas, and times⁹⁷.

⁹² www2.datasus.gov.br

⁹³ In particular the case of the Brazilian state of Acre that shows almost a 50% decrease of the rate between the years of 1998 and 1999, to return to previous levels on 2000

⁹⁴ www.sinais.salud.gob.mx

⁹⁵ In 1986 the Federal Government establish a national format for death certificates based upon WHO standards, in 2009 President Calderon modified the format to render it more accurate to current factors that could help improve the national health system data.

⁹⁶ One recent phenomenon that might prove challenging for the construction of more reliable data on homicides are the “Levantones” in Mexico or “Desaparecimientos” in Brazil, meaning the kidnapping and future killing of the victim. Recent news in Mexico have showed that organized crime has created hidden mass graves to conceal their killings. <http://mexico.cnn.com/nacional/2011/04/06/autoridades-hallan-una-fosa-con-cuerpos-en-san-fernando-tamaulipas>

⁹⁷ WHO, 2010

In Mexico we can historically observe that the national homicide rate moves similarly as the demographic percentage of men does; women show only an average 1.5 homicides per 100,000 during the two decades⁹⁸. If the data is analyzed by age group, we can find some differences among them, those men between 35-39, are the most affected during these last few years of homicide surge, with a rate of 73 per 100,000. It is interesting to observe that all of the age groups seem to increase their vulnerability after 2007⁹⁹; further comparison among the states will confirm this trajectory on homicides.

In Brazil, previous research has shown that homicides are one of the main factors in the mortality rates of young males, with higher risks between the ages of 20-24. An additional factor to be considered is race, with systematic numbers of blacks affected more by violence than any other group, a more detailed analysis based on education and race as a measure of social class confirmed that race group at a higher risk¹⁰⁰. The same study in the Brazilian case found that single men in Rio have higher homicide rates than married ones.

Recently the Mexican government released a database with deaths related to inter-cartel conflicts from the month of December 2006 to 2010¹⁰¹, Figure 2 graphs these monthly data against total homicides recorded on the SINAIS. The information

⁹⁸ JASL, Poster presented at the Mexico Moving Forward 2012. Data for 1990-2010. Source: SINAIS.

⁹⁹ UNODC, 2011

¹⁰⁰ Cano and Ribeiro in Da Cruz, 2007.

¹⁰¹ Secretaría de Gobernación, México (Ministry of Interior), <http://www.presidencia.gob.mx/base-de-datos-de-fallecimientos/>

must be taken carefully since there is no legal methodology to establish such a category, which is rather the result of an inter-secretary public safety commission. The data indicates that collective violence reflects the current homicides trends in Mexico, with more than 50 % of all homicides after 2009¹⁰².

There is evidence that crime is not uniformly distributed but rather there are geographical and temporal factors that must be taken into account in order to develop proper policing solutions¹⁰³; police departments try then to find clusters with high concentration of crimes or “hotspots”, in order to prevent it. We must detect these crime patterns over time and space¹⁰⁴, look for association between particular places such as schools, bars, banks or public housing and crime rates, in this sense homicide is no different than other crime and could be subject to cluster identification. The analysis can be done at the street, neighborhood or city level for policing activities, or as for the particular interest in this research on a state level.

¹⁰² For more details see TBI Drug Violence in Mexico, 2011 (march 2012)

¹⁰³ Spellman, 1995

¹⁰⁴ Eck and Weisburd, 1995

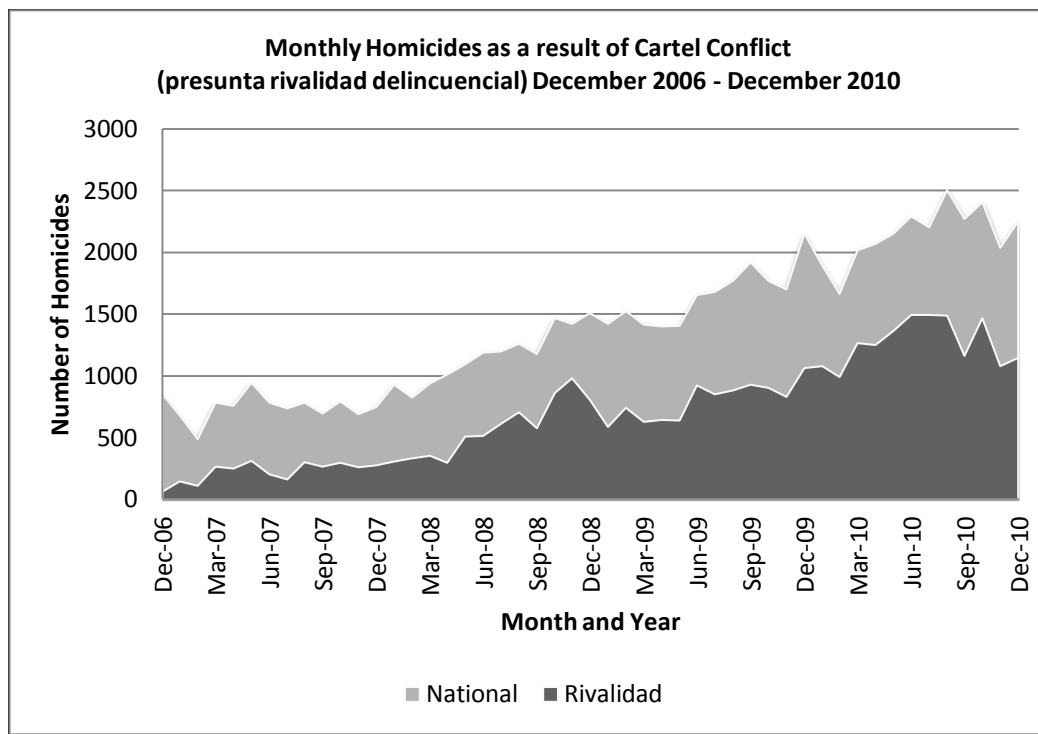


Figure 2. Homicides in Mexico due to Inter Cartel Conflict, 2006-2010. Source: Sistema Nacional de Informacion de Salud (SINAIS) / Sistema Nacional de Seguridad Publica, Homicidios por presunta rivalidad delincucional

3.3. Comparing Trends

Homicide trends show a better picture when analyzed at a subnational level since it allows to control over national versus state effects. According to the latest UN report, population density might be linked in some cases to higher homicide rates, but this is not constant for the entire Latin American region. For example, Guatemala experiences high rates in rural areas of the Petén, suggesting that it is the international border region and drug trafficking activities around it that drive homicide trends¹⁰⁵. In the Mexican context this seems to be similar, since violence is concentrated not only

¹⁰⁵ UN global report on homicides, 2011

on border states associated with drug trafficking routes such as Chihuahua or Baja California, but also with rural areas that might be related to drug cultivation such as Guerrero¹⁰⁶; high populated cities in Mexico tend to show lower homicides rates in average than rural municipalities¹⁰⁷.

Big cities are generally associated with higher homicide rates in the region, perhaps explained by the environmental risks associated with high returns for crime, low identification probabilities, and migration and urbanization effects that enhance social stress¹⁰⁸. These tendencies better reflect the Brazilian situation, where municipalities with more than 100,000 inhabitants experience higher homicides rates, and could possibly explain the rates in the states of Sao Paulo and Rio de Janeiro¹⁰⁹.

We must compare not only geographical tendencies but how they move across time. Figures 3 and 4 show the historical behavior of homicides rates at a state level for Mexico and Brazil; the distribution is set on quintiles, where each level of homicide rates is divided in five equal proportions. Those states with higher rates are expressed with a darker color; this method is used in order to identify what states have historically had higher rates, and to help identify clusters of violence across time.

On the Mexican case we can see that historically Guerrero, Oaxaca, Sinaloa, Chihuahua, and Baja California are violent, and in spite of public perception Mexico

¹⁰⁶ TBI, 2011.

¹⁰⁷ Arredondo, 2010.

¹⁰⁸ UNODC, 2011

¹⁰⁹ Cano in Homicidios no Brasil, 2007

City is on the medium range throughout these two decades for violent crimes. For Brazil we find that Rio de Janeiro, Espirito Santo, Pernambuco and some border states as Mato Grosso and Roraima show historically high levels of homicides compared to the rest of the country. It is interesting to observe that Alagoas and Bahia have become more violent at the end of the present decade.

Maps¹¹⁰ can help to visualize clusters and identify success cases, one example of this could be the state of São Paulo that in the year 2009 finds itself within the lowest homicide rates in the Country. It has been documented as a case of successful implementation of police reform and preventive crime policies¹¹¹. The São Paulo strategy combined actions such as alcohol sales limits, gun control, new policing strategies, NGO's participations with local authorities to tackle high violence levels, as early as in 1999¹¹². To complement this analysis, the rates by state for both countries were graphed and are showed in Appendix A. In Mexico, six states finish the present decade with more than 40 homicides per 100,000: Baja California, Chihuahua, Durango, Guerrero, Nayarit and Sinaloa, many of them historically violent. In the Mexican case, rates have decreased since the early 1990's, at the beginning of which at least four other states experienced rates higher than 25 homicides per 100,000, including Oaxaca, Morelos, Michoacan, and Estado de Mexico. Four more reached that level at least once during these two decades: Colima (1992), Quintana Roo (1994), Sonora (2010) and Tamaulipas (2010).

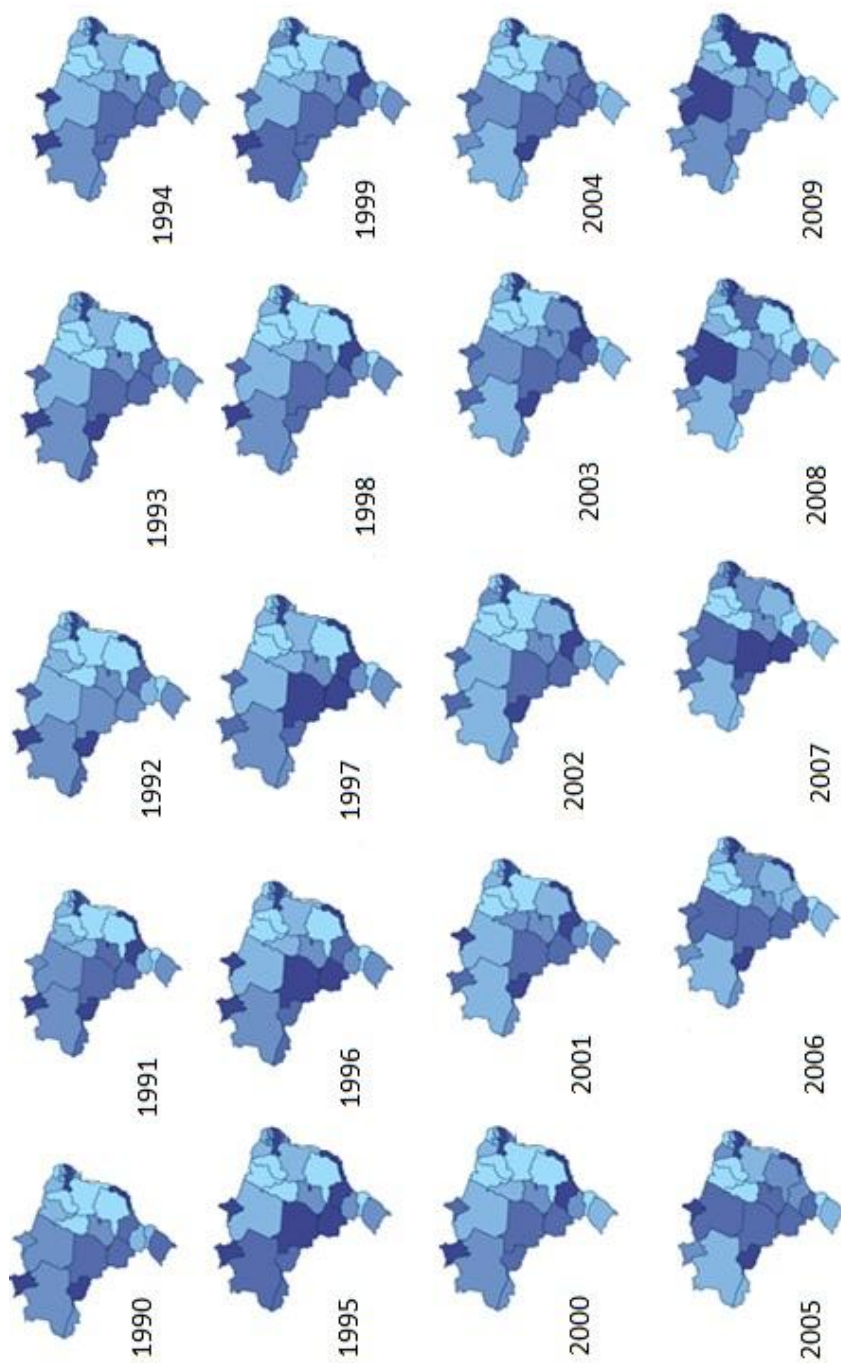
¹¹⁰ Appendix D shows the maps of Mexico and Brazil with the federal state names

¹¹¹ World Bank, 2005

¹¹² Savio, 2012



Map 1. Historical Homicides Rates by state, Mexico, 1990 - 2010 Source: SINAIS



Map 2. Historical Homicides Rates by state, 1990 - 2009, Brazil. Source: IBGE

In the Brazilian case we can find only four states that ended a year with more than 40 homicides per 100,000: Para, Pernambuco, Espiritu Santo, and Alagoas, two of them historically violent. However, the data varies greatly and several more have experienced peaks of violence. We must remember that the average rate of Brazilian states has always being higher than the Mexican one.

Previous studies of Homicide take into account the comparison of general rates by 100,000 inhabitants, classifying for example by gender, age and type of violence, however they lack measures to reduce variability across regions and time, allowing comparison under a common historical scale¹¹³. For this reason three additional normalized measures are constructed on a federal state level, inspired upon a similar approach undertaken for understanding the relationship between crime and perception of insecurity¹¹⁴: a variable to track relative positions to the yearly national average, a measure of self-progress during two decades, and finally the stability of their homicides rates. It became necessary to obtain the standard score for every state rate in both countries with two different means and standard deviations, depending on the kind of comparison. The formula used:

$$z = \frac{x - \mu}{\sigma}$$

¹¹³ World Bank, 2006; ICESI, 2010; UNODC 2011

¹¹⁴ Dammert Mayo 2012

To assess the relative positions to the national trend a Mean (μ)¹¹⁵ and a Standard Deviation (σ) was obtained per year, meaning that every state is compared to the national data for that year; the intention was to establish a measure that would allow us to understand how the homicide rate of a state behaved compared to the country rate¹¹⁶. Those states that are beyond +/- 1 standard deviation should be looked at more closely.

Figure 5 contains only those Brazilian cases where the score has at least touched + 2 S.d. during any year, which could be understood as spikes in violence compared to the yearly national rate. We can observe that Sao Paulo and Rio de Janeiro have experienced reductions of homicides relative to the national average. In the opposite direction we can find Alagoas that has increased its rate from 30 in 1990 to almost 60 homicides per 100,000 in 2009. It is interesting to observe that the border State of Roraima has experienced a decrease of homicides rates, after it reached 57 per 100,000 in the year 1999.

The same experiment is replicated for Mexico, but the picture is less clear. Great variability is found among states, only six would at some point touch the barrier of + 2 S.d., these are: Baja California, Chihuahua, Durango, Guerrero, Michoacan and Oaxaca. When analyzed closely we can observe that Guerrero has historically been above the national average with high homicide. The neighboring Oaxaca has experienced a decrease during the last three years of the study compared to the

¹¹⁵ μ = National Average of year X. One for each year from 1990 – 2010.

¹¹⁶ The complete graphs for Mexico and Brazil are shown in Appendix B

national tendency, it had a rate of 40 homicides per 100,000 in the year of 1990 and it scored a low 15 homicides in 2006; historically it is on the group of states with higher rates, in spite of a national reduction in these two decades. The state of Michoacan experienced an increase of more than two S.d., it saw its rate increase from 17 homicides in 2005 to almost 25 per 100,000¹¹⁷. We can find also those states with a stable and low historical rate such as Yucatan, Aguascalientes and even Nuevo Leon that in spite of the current wave of violence had a historical rate average of 4.5 homicides, 2010 ended with 19.

To complement the comparison it is necessary to match each federal state to its historical average rate to detect any improvement across time, for this a new standardized score is created using as Mean (μ) the average federal state rate obtained during these two decades and the Standard Deviation (σ). The objective is to create a tool to compare states to themselves, hoping to identify data inconsistencies, national tendencies or successful reductions in crime. Figure 7 reflects the Mexican case, were the national rate decreased during the early 2000's; it seems that every state experienced a reduction according to its historical records. It is striking the change in trends experienced after 2007 that reflects an increase on a national level. The case of Quintana Roo in 1994, that experiences a sudden increase of the rate should be analyzed in more detail since could reflect an error in the data.

¹¹⁷ in 2006 President Calderon sent the army to this part of the country first in the fight against DTO's

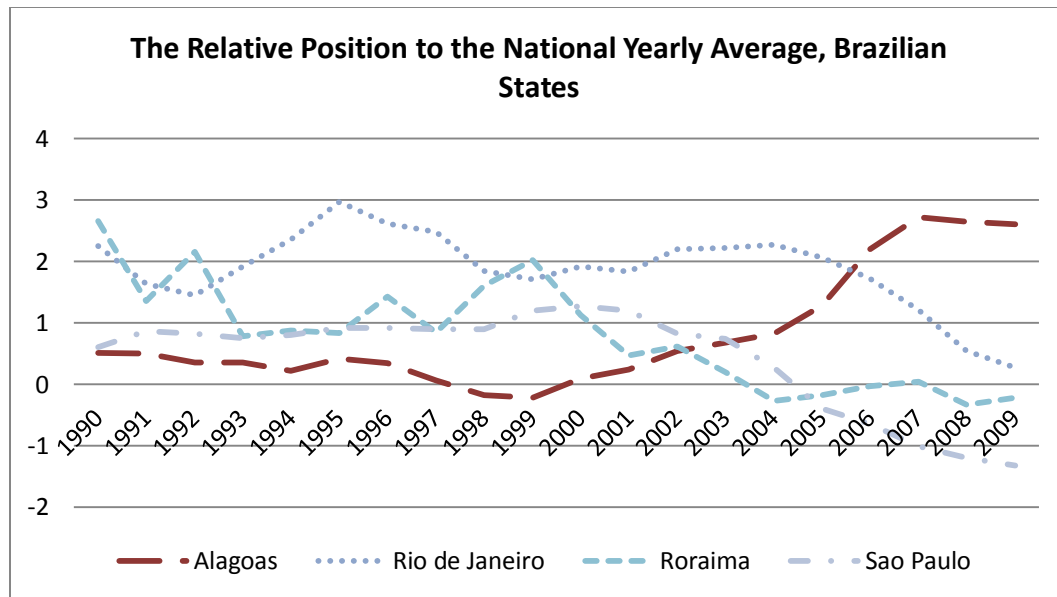


Figure 3. Three Brazilian states relative positions to the national trend. Source: IBGE, DATASUS. Homicides 1990-2009

The same exercise was practiced on the Brazilian states, the full graph can be found on Appendix C. As in the Mexican case the national tendency of the rate is reflected, with only two states ending the decade with a score under -1 S.d., Rio de Janeiro and Sao Paulo, both cases where efforts of police reform have been undertaken and that escape the national tendency of increases in crime. As in the case of Quintana Roo in Mexico, it seems that Acre on the year 1999 could be an error in the data, passing from a 21.4 homicides in 1998 to 9.7 in 1999, only to return to 19 the following year¹¹⁸.

¹¹⁸ it was necessary to compare to other mortality rates to see if that year experienced those changes, suicides shows the same tendency but is not the case with transport accidents or infant mortality

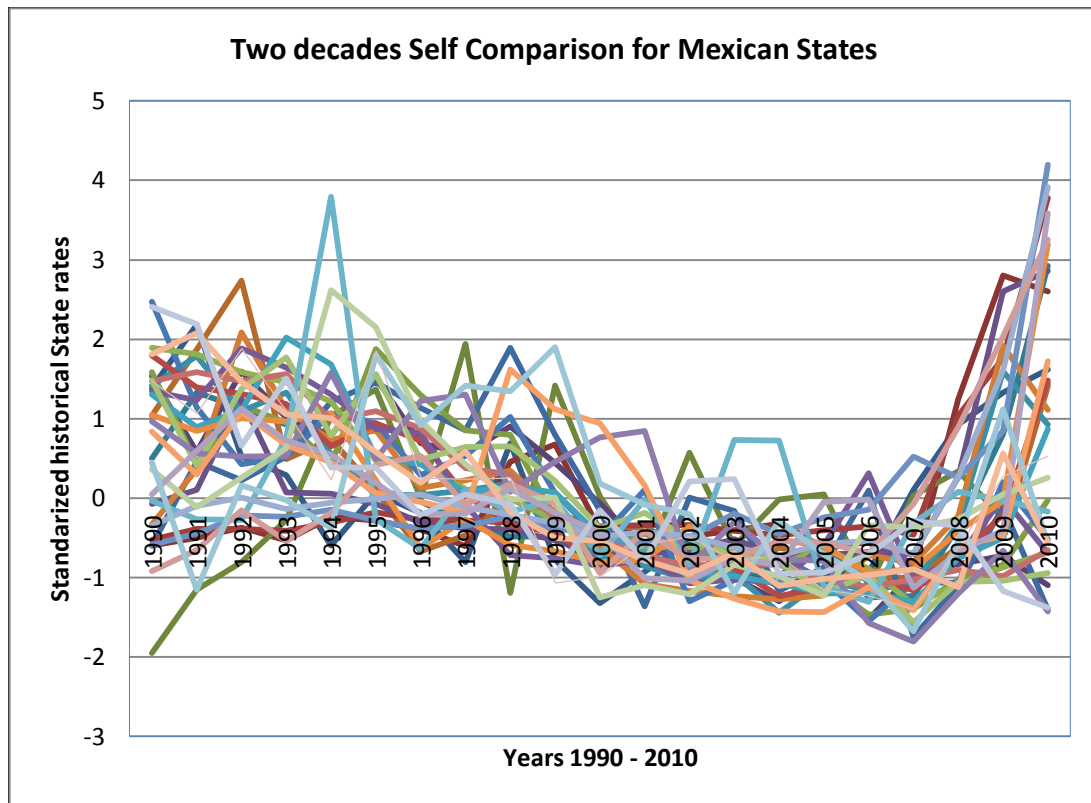


Figure 4. Mexican States comparison to their Historical Homicides rates. Source: SINAIS

The third and final method of comparison takes into account not the speed of change as the Latinobarometro studies¹¹⁹, but rather a measure used to identify hotspots, which is the stability of crime across time. The objective is to detect if some areas have stable levels of homicides across time. According to past literature, if the rates show a high variability due to non-structural factors it could be less appropriate to designate scarce resources and temporary solutions might be needed, if the variation is less significant maybe structural reforms should be implemented¹²⁰. It has been

¹¹⁹ Dammert, 2012

¹²⁰ Spelman, 1995

showed before that high criminality places show a tendency to stability across time¹²¹, in order to detect it the Coefficient of Variation (CoV) is used and defined as:

$$CoV = \frac{\sigma}{\bar{x}}$$

The CoV values close to zero would reflect that homicides are distributed uniformly across time; numbers above one indicate an S.d. higher than the mean, which implies high variability. Figures 8 and 9 reflect in a scatterplot diagram the relationship between the CoV and the average homicide rates for each state in Mexico and Brazil during the two decades of data.

In Mexico we can identify a cluster of states that seem to have low average historical rates and stability reflected by low CoV; as mentioned before Chihuahua and Guerrero show high rates of homicides, structural reforms should be implemented in order to reduce violence. It is interesting to observe the case of Nuevo Leon, that in spite of having low homicides show a higher CoV as a result of the recent spike on crimes, a more tailored and temporary solution should address this problem.

When the Brazilian states are compared we identify Rio, Pernambuco and Espiritu Santo with the highest rates of homicides, and also with low scores of CoV which implies stability across time; none of the federal states score higher than 0.6, and it is also difficult to detect any clustering as the Mexican case. We must be careful in reading the CoV since longer periods of historical data might improve the accuracy,

¹²¹ Johnson, 2008

but also erase variation across years, since during that time police reforms and crime prevention programs might be affecting the regional tendencies¹²²; we must then focus our reform efforts on those places with high and stable homicide rates, where violence might be endemic.

¹²² Stable and Fluid Hotspots of Crime

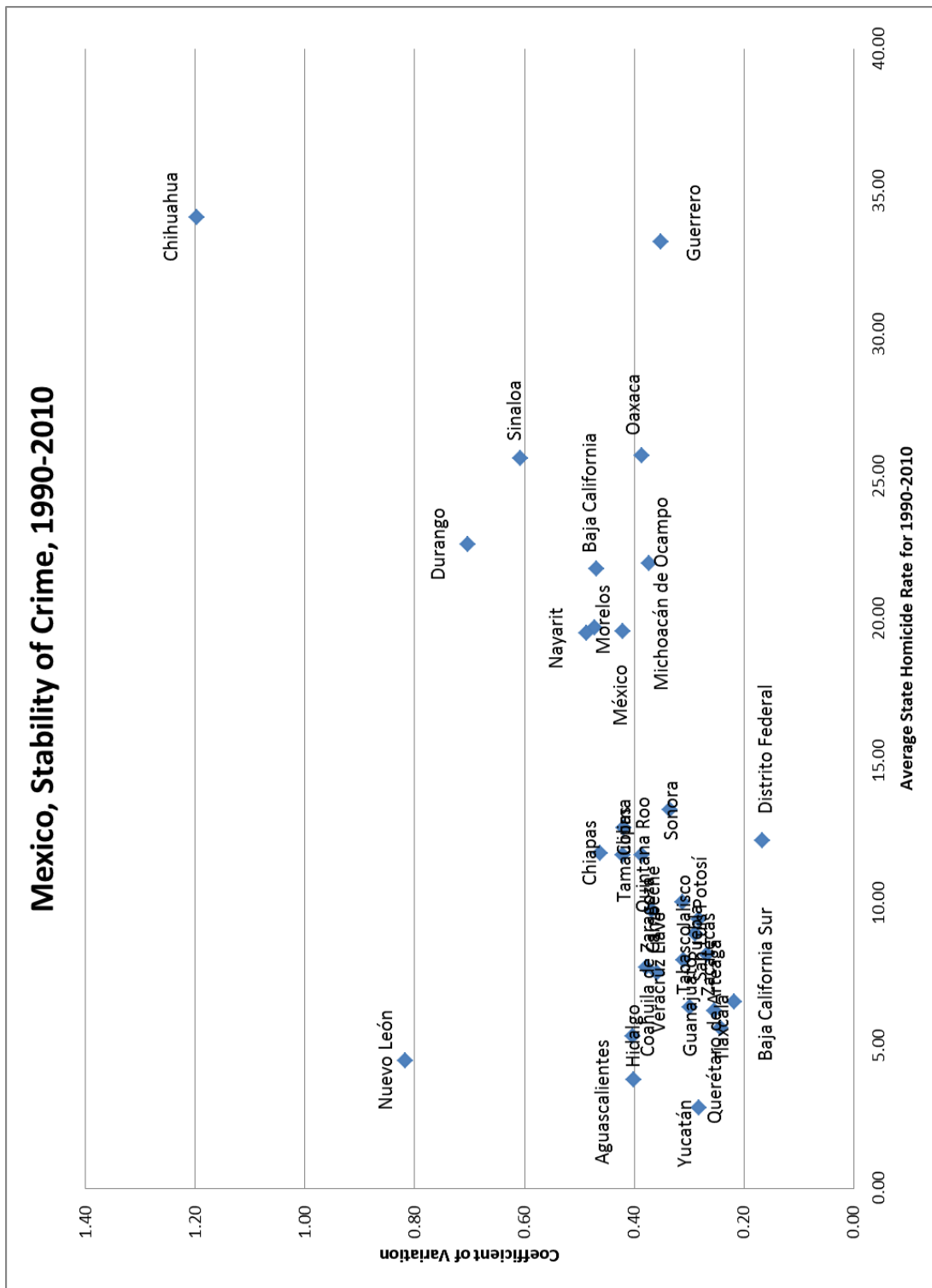


Figure 5. Stability of crime, Mexican states, 1990-2010. Source: SINAIS.

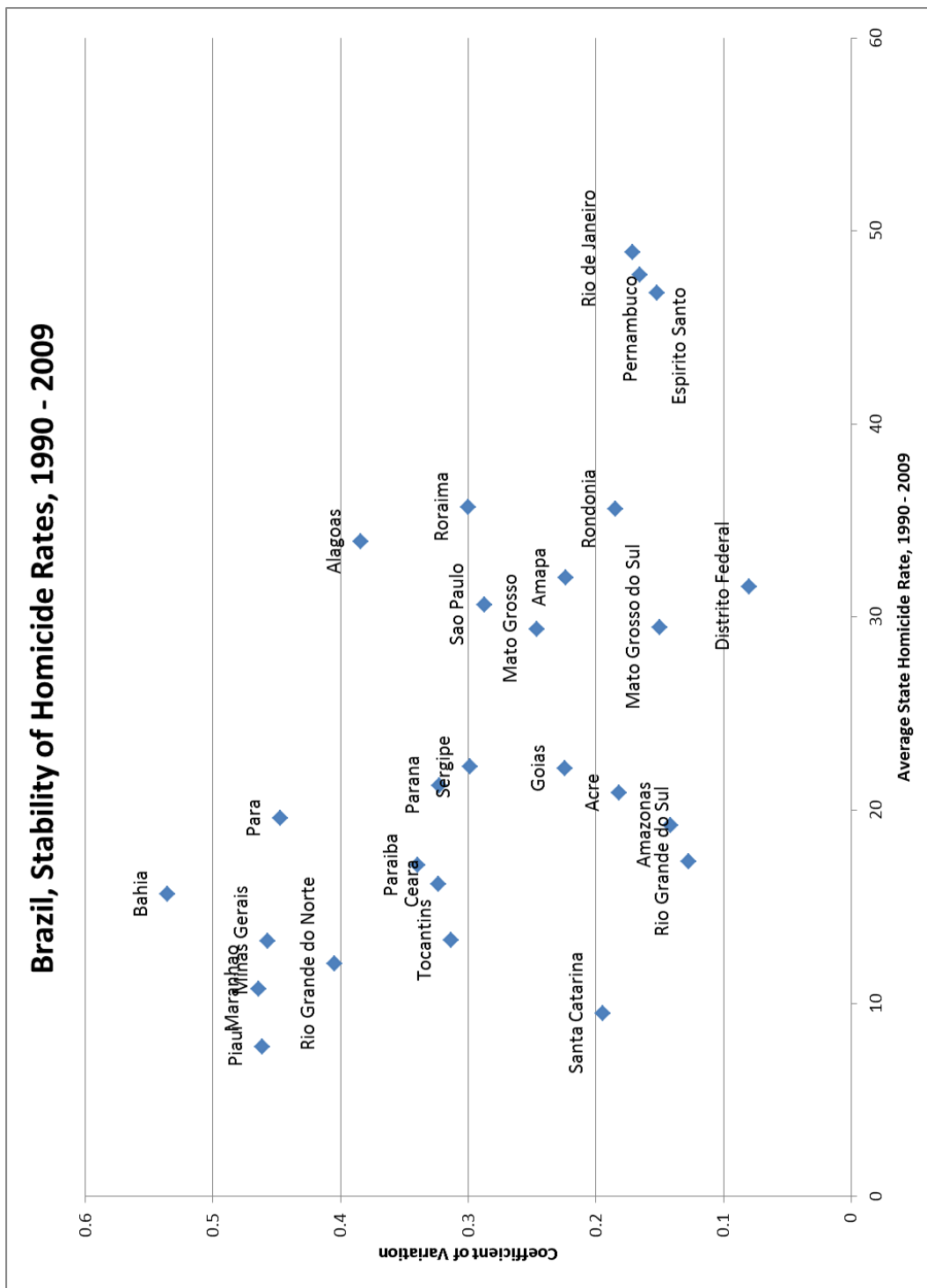


Figure 6. Stability of Crime, Brazilian states, 1990-2009. Source: IBGE, DATASUS

CONCLUSION

In Mexico and Brazil Homicides trends vary greatly among federal states and across time. The correlation between the high violence levels and the low CoV showed in the Brazilian case does not hold in Mexico, and we can also see in the latter case a shift of violence to the borders and cities. It is interesting to point out the case of Chihuahua in Mexico, that in spite of showing the highest homicide average rate the CoV registers a value above 1, indicating that at some point of time it showed low levels of violence.

These comparisons allow us to point out a few cases that must be analyzed in future research, using a broader set of statistical methods that take into account political, economic and budget data; always assessing the importance of a set of well characterized national and state police reforms. Previous literature in Brazil¹²³ has studied the econometric relationships at a municipal level between victimization and socio-economic variables for a short period of time, this exercise should be replicated for the Mexican municipalities.

We need to pay attention to those states rated among the highest quintile throughout these two decades, even if the historical rates of the country and itself have lowered, such could be the case of Oaxaca in Mexico or Roraima in Brazil. It becomes necessary to identify possible geographical factors associated to violence such as border status or the inclusion of mayor ports and mayor highways, among others.

¹²³ Cerqueira, 2005

As analyzed before federal states must not only be compared to the national trends, but also to their own historical tendencies. It will be important to understand better the case of Rio de Janeiro and its capital, since it seems during these last years there are successful public policy implementations that helped reduce violence¹²⁴. On the opposite case the Mexican municipality of Chihuahua and the federal state show increasingly alarming rates of homicides at the end of the decade, in spite of what could be qualified as a recommended police reform¹²⁵, prompting the idea of other structural factors influencing violence such as DOT intra conflict.

Other analysis should relate to the stability of crime. In the Mexico the federal state of Yucatan shows low violence and stability, this must be studied documenting any possible reform by the state police forces and the local systems of justice. In Brazil the relative stability of federal states with high crime as Espiritu Santo and Pernambuco must be better understood. As indicated by previous crime literature¹²⁶ a longer use of data can help to identify better the hotspots of crime, however it also diffuses any effect of public policy reforms, that's why future research must divide the analysis into shorter time periods.

A further step should be an analysis of municipal levels of violence to distinguish between urban and rural crime, this implies the need for more detailed local statistical information; however more cases of data inconsistencies, as in the

¹²⁴ Ferreira and Britto, 2010

¹²⁵ Sabet, 2012

¹²⁶ Spelman, 1995; Johnson, 2008

federal states of Quintana Roo in Mexico or Acre in Brazil, could be expected to arise more often at the municipal level. We must focus our attention in identifying those places where violence might be endemic to draw programs based on local diagnostics that understand better the particular problems of violence.

Police forces cannot be the only solution to Latin American security problems but surely enough they find at the center of it. As documented before there are several police reforms implemented on the local and national level, however in Mexico police officers are appointed on many occasions by the connections that have towards their immediate supervisors¹²⁷. In both countries change of government is many times a start from scratch, it is necessary to institutionalize the reforms so it allows the continuation of programs regardless of political changes¹²⁸. Once a program is installed it is necessary to count on substantial support by the executive power and the opposition parties to act as a single block, hoping to develop stable ties with of the population, fostering a linkage between them and their police¹²⁹. Further statistical analysis must include into account politicians actions, such as hiring of police officers during election times, previous research in the US¹³⁰ has included this among other factors that could help determinate crime.

¹²⁷ Sabet 2012

¹²⁸ Sabet 2012; Hinton 2006

¹²⁹ Sabet, 2012; Ungar 2011

¹³⁰ Levitt, 2004

An additional element for the implementation of police reform lies within the attitudes displayed by its own agents, who may feel isolated from the programs and thereby canceling any positive effect. Officers and troop should be involved in planning the reforms, so collaboration with external actors and the police can be successful, combining a scientific evaluation of the results and adapt them to the realities of policing in a day by day basis¹³¹.

As recommended by the WHO, solutions must be drawn with a public health approach, a good example of this is the project *Desarrollo, Seguridad y Paz – DESEPAZ* (Development, Security and Peace) in Cali, Colombia, where epidemiology studies helped to understand the risks of violence and allowed to draft actions that helped to reduce the homicide rates locally around 30%¹³². An interdisciplinary group of academics, police officers and local government officials study the causes of violence, possible police reforms and civic education actions; the program included a limit on alcohol sales, arm control policies and road safety preventive strategies.¹³³

To conduct better statistical analysis particular attention must be taken to the set of information provided by police departments, in Mexico there is no official data related to the numbers of police forces each federal state and municipalities have, budget figures are obscure and difficult to evaluate. In Brazil the NGO Fórum

¹³¹ 2006 Bailey

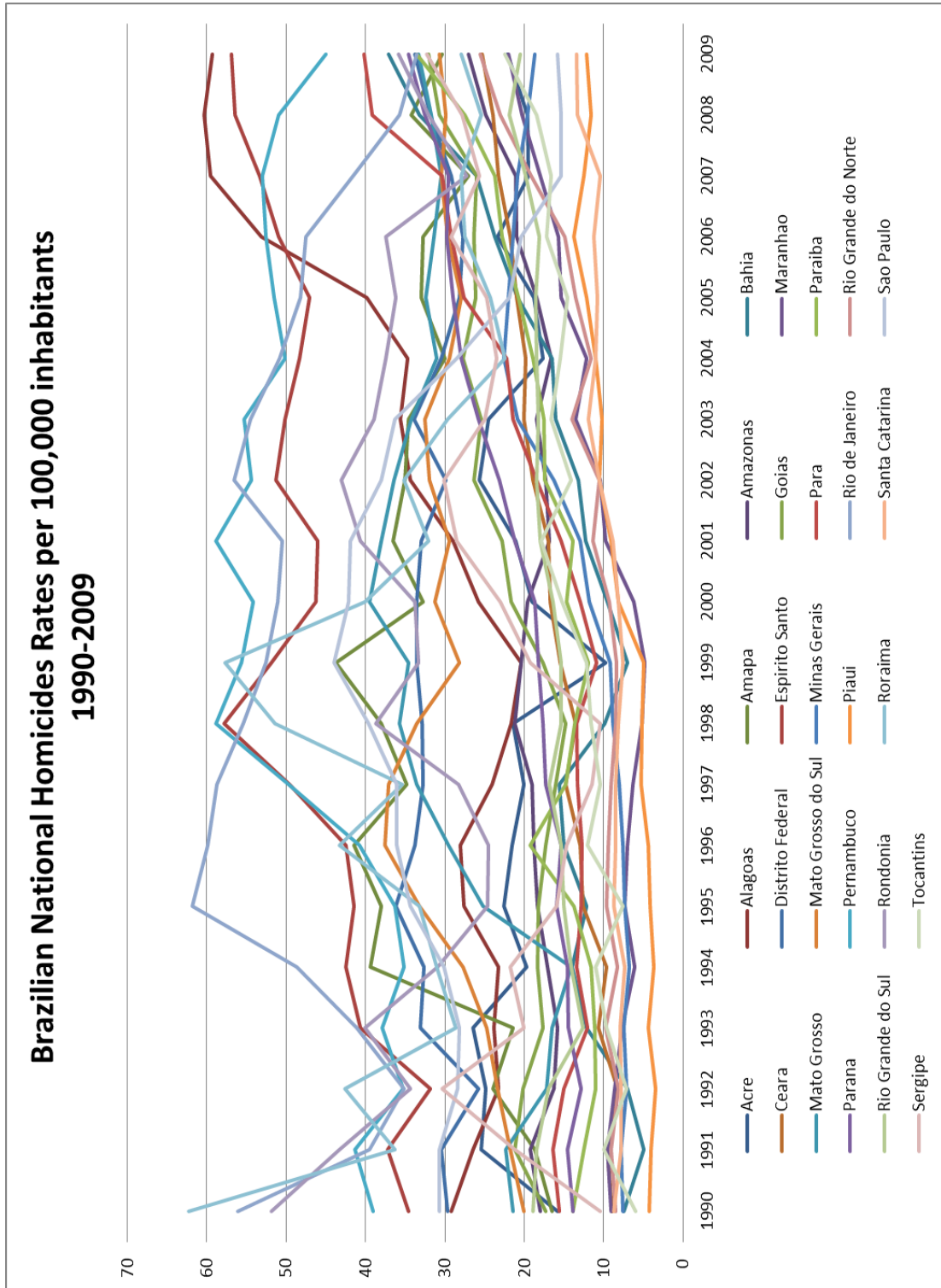
¹³² WHO, 2002

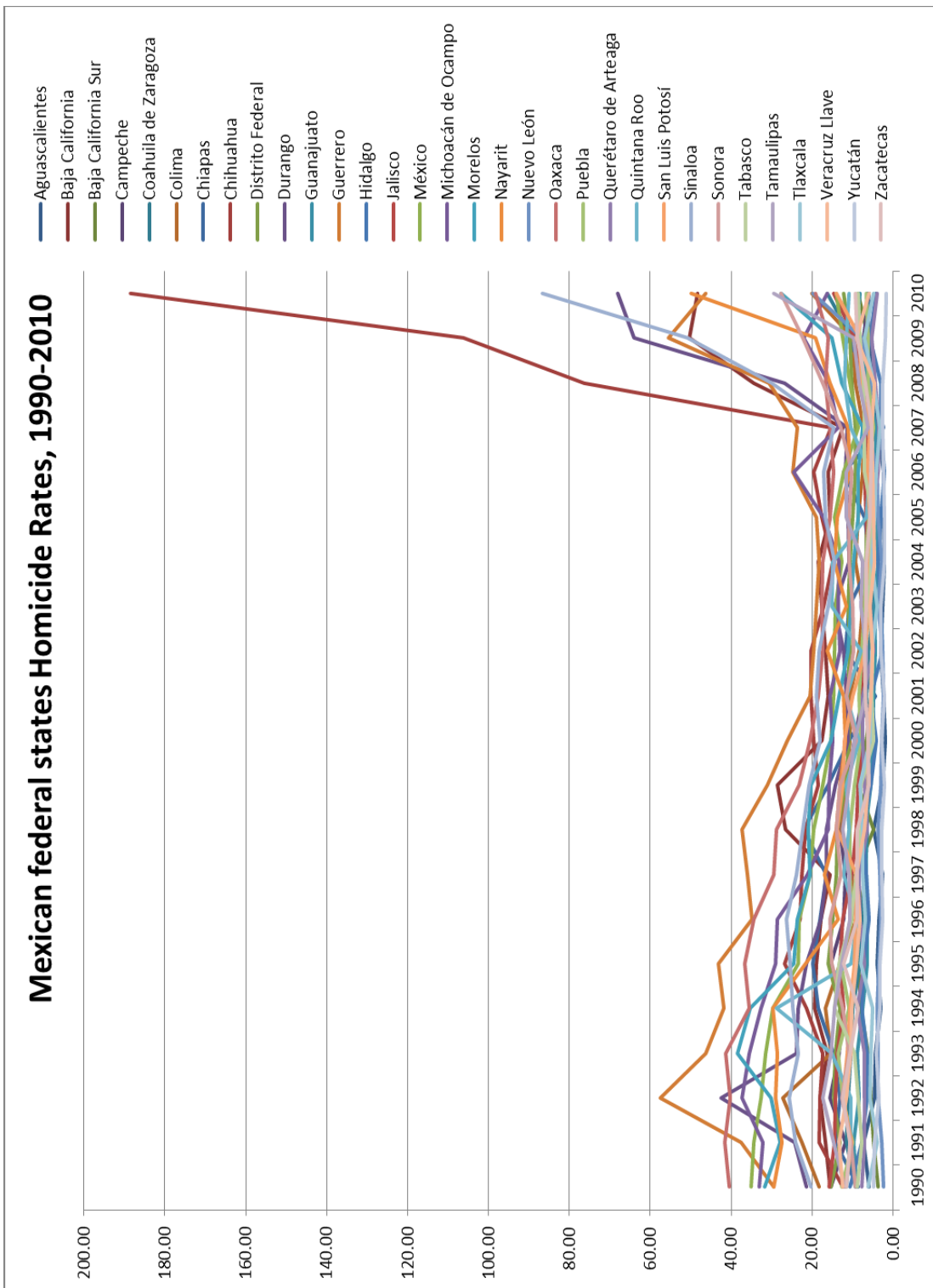
¹³³ Guerrero, 1999

Brasileiro de Segurança Pública – FBSP (Brazilian Forum of Public Safety) has engaged in a combine exercise with the authorities, to document and make public a statistical series that provides not only broader crime data but also policemen and budget figures¹³⁴. This Brazilian experience should be replicated in Mexico to allow for better external accountability.

¹³⁴ FBSP, 2011

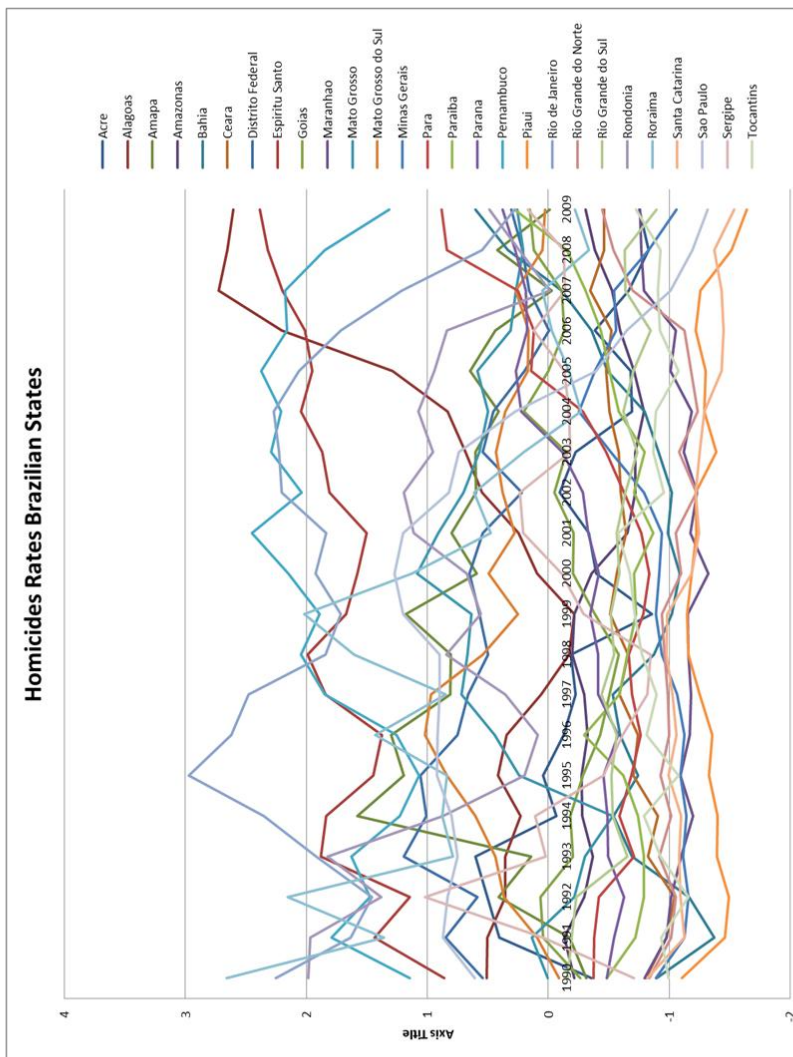
APPENDIX A





APPENDIX B

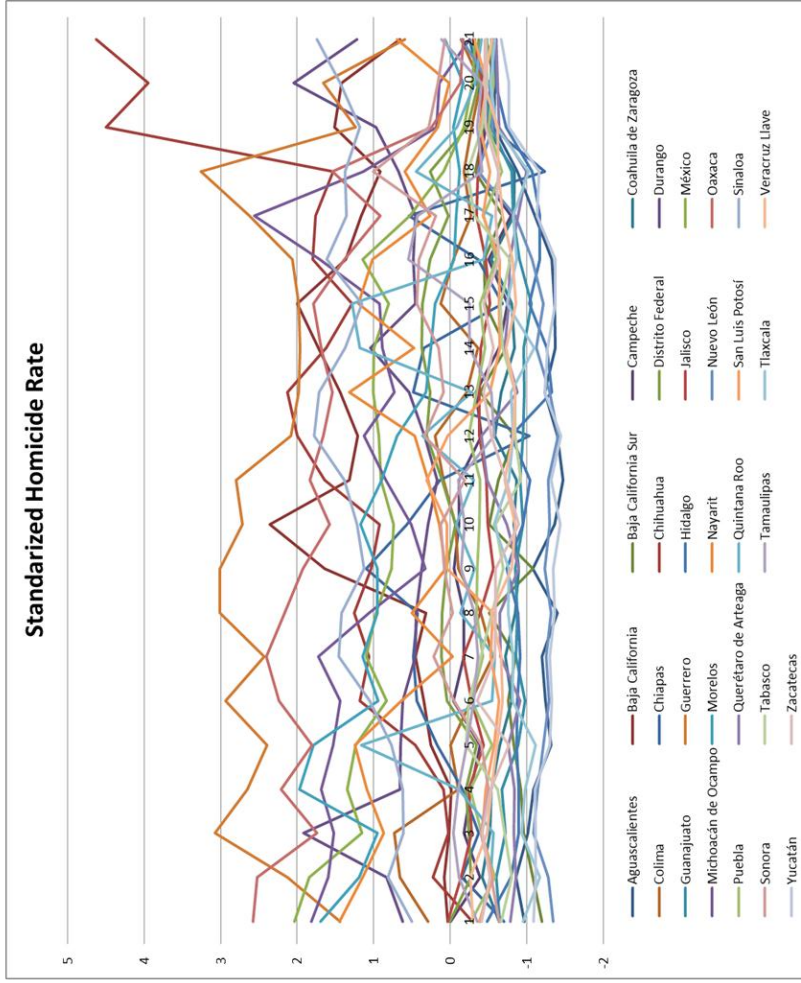
Comparison State to yearly National Average 1990-2009



Standardized Rates.

m = Average National Rate per Year. $S.d.$ = National level per Year

Comparison Mexican States to yearly National Average 1990-2009

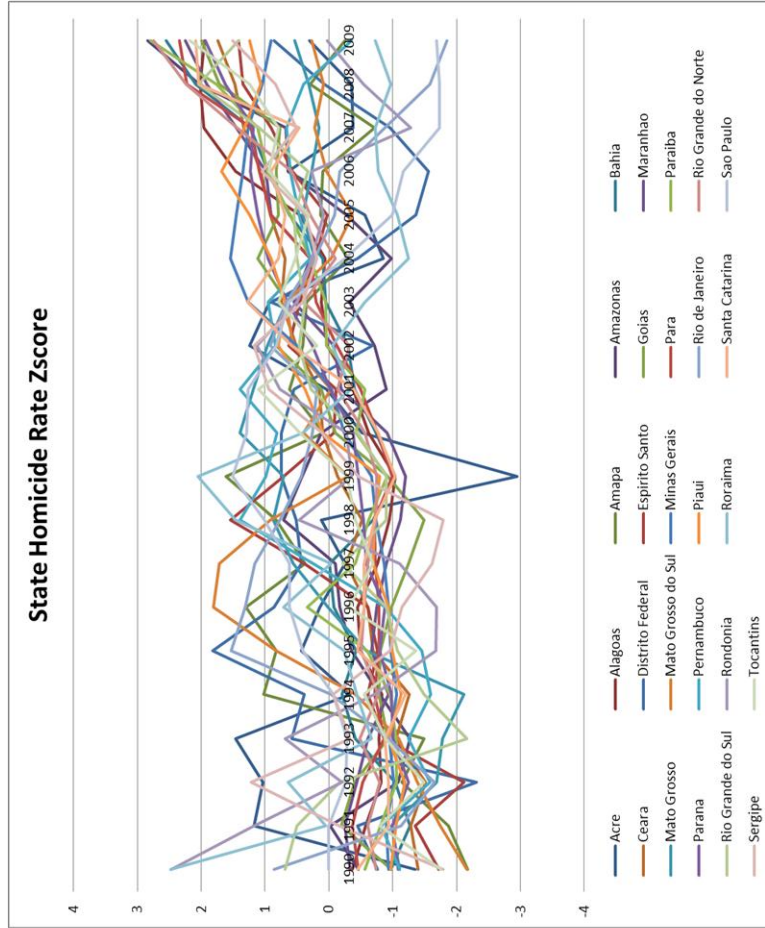


Standardized Rates.

m = Average National Rate per Year. $S.d.$ = National level per Year

APPENDIX C

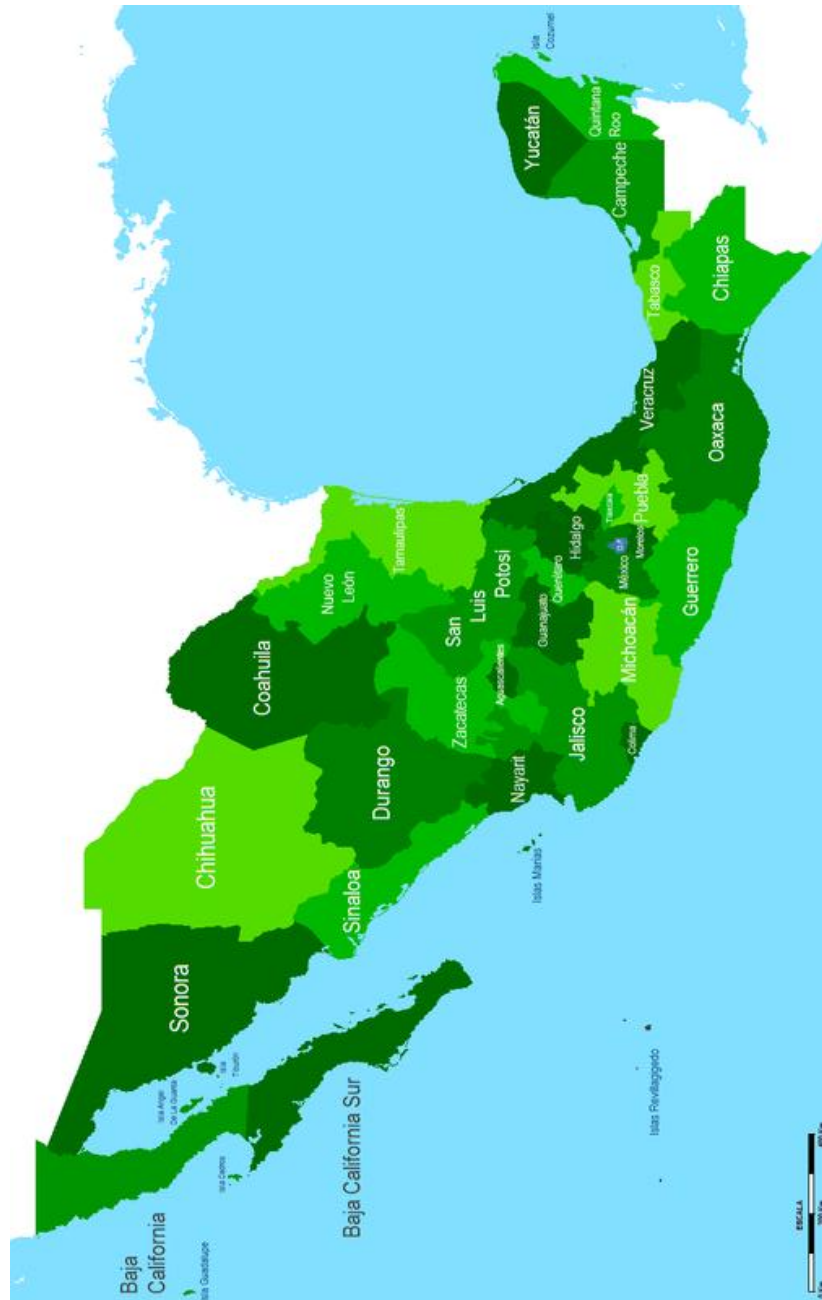
Comparison State to Itself, Brazil
1990-2009



Standardized Rates.

m = Average homicide State Rate 1990-2009 $S.d.$ = By State level from 1990-2009

APPENDIX D



Mexican States. Source:
http://en.wikipedia.org/wiki/File:Mapa_Mexico_2010.PNG



Brazilian States. Source: http://en.wikipedia.org/wiki/File:Brazil_states_named.png

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